DEPARTMENT OF THE AIR FORCE

RDT&E DESCRIPTIVE SUMMARIES FOR

FY 2001 PRESIDENT'S BUDGET

VOLUME IIB



FEBRUARY 2000

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Fiscal Year 2001 Budget Estimate Submission RDT&E Descriptive Summaries, Volume II February 2000

INTRODUCTION AND EXPLANATION OF CONTENTS

- (RDT&E) program elements and projects in the FY2001 President's Budget Submission (PB). All formats in this document are in accordance with the guidelines of 1. (U) GENERAL. This document has been prepared to provide information on the United States Air Force (USAF) Research, Development, Test and Evaluation the DoD Financial Management Regulation, Volume 2B, Chapter 5 with the exception of the R-3 exhibit. The Air Force could not support the format matrix because our programs do not track their programs in the manner required to complete the exhibit.
- of the Congressional committees insofar as possible. The F-22 "P-5" budget exhibit directed by the Authorization Conference Report number 106-371 Contents: Exhibits R-2, R-2a and R-3 provide narrative information for all RDT&E program elements and projects within the USAF FY 2001 RDT&E program except the classified program elements. The formats and contents of this document are in accordance with the guidelines and requirement has been inserted behind the R-3 exhibit for program element 0604239F. ä.
 - Construction appropriation funds on specific development programs, Operations and Maintenance appropriation funds where they are essential to the development effort described, and where appropriate, Department of Energy (DOE) costs.

 The Justification book has been assembled in accordance with DoD Financial Management Regulation 7000.14, Vol. 2B Cpt 5, Sec 050302 with the The "Other Program Funding Summary" portion of the R-2 includes, in addition to RDT&E funds, Procurement funds and quantities, Military Ъ.
 - exception of the R-1; Project Funding Listing which was distributed under a separate cover due to classification. ပ

2. (U) CLASSIFICATION.

All exhibits contained in Volumes I, II and III are UNCLASSIFIED. Classified exhibits are not included in the submission due to the level of security classification and necessity of special security clearances.

INTRODUCTION AND EXPLANATION OF CONTENTS

Program Element	Remarks
BUDGET ACTIVITY 1: BASIC RESEARCH	
BUDGET ACTIVITY 2: APPLIED RESEARCH	
0602202F, Human Effectiveness Applied Research	Project 6219 was terminated after FY 1999, but Congress added funding in FY 2000.
0602269F, Hypersonic Technology Program	Project 1025 funding for this program in FY01 is contained in PEs 0602023F Aerospace Propulsion, 0603203F Aerospace Propulsion Subsystems Integration and 0603216F Aerospace Propulsion and Power Technology.
0602601F, Space Technology	Project 1011 all rocket propulsion efforts will be transferred to 0602203F, Project 4847. Project 3326 all lasers and imaging efforts will be transferred to PE 0602605F, Projects 4866 and 4867.
0602605F, Directed Energy Technology	Projects 4866 and 4867 were transferred from PE 0602601F.
0602702F, Command, Control and Communications	Project 4506, Surveillance Technology will be transferred to Project 4594, PE 0602702F and Project 7622, PE 0602204F beginning in FY01.

BUDGET ACTIVITY 3: ADVANCED TECHNOLOGY DEVELOPMENT

ns In FY 2001, the efforts in Project 632863, Integrated Photonics, will be	conducted in PE 0603203F, Project 63665A. Prior to	FY 2001, the efforts in Project 634850, Collaborative C2, were	performed in PE 0603253F, Projects 632735 and 63666A.
0603726F, Aerospace Information Technology Systems	Integration		

BUDGET ACTIVITY 4: DEMONSTRATION AND VALIDATION

0603441F, Space Based IR Arch (Dem/Val)	SBIRS Low efforts performed in Project 0007 will be transferred to PE 0604442F, Project 4598 in FY00 and 01.
0603800F, Joint Strike Fighter	Project 2025 will complete in FY01.

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Program Element	Remarks
BUDGET ACTIVITY 4: DEMONSTRATION AND VALIDATION Continued	DATION Continued
0603854F, Wideband Milsatcom	Project 4870 is a FY01 new start.
0603856F, Air Force/NRO Partnership	Project 4782, the Air Force/National Program Cooperation (AFNPC) effort is a FY01 new start.
0603859F, Pollution Prevention	Project 4852, Pollution Prevention will be transferred from PE 0605854F, previously in Budget Activity 6 beginning in FY01.
BUDGET ACTIVITY 5: ENGINEERING AND MANUFACTURING DEVELOPMENT	CTURING DEVELOPMENT
0207249F, Precision Attack Systems Procurement	Project 2693 is a FY01 new start.
0604012F, Joint Helmet Mounted Cueing System	Project 4789 the Joint Helmet Mounted Cueing Systems effort is a FY01 new start.
0604201F, Integrated Avionics Planning and Development Project 2257 will complete in FY01.	Project 2257 will complete in FY01.
0604270F, EW Development	Project 8462 is a FY01 new start.
0604602F, Armament Ordnance Development	Project 3133 will complete in FY01.
0604327F, Hardened Target Munitions	Project 4641 will complete in FY00.
0604617F, Agile Combat Support	Project 2895 will complete in FY01.
0604706F, Life Support System	Project 412A, the K-36/3.5A Ejection Seat effort is a FY01 new start.
0604754F, Joint Tacital Information Distribution System	Project 4749, the Air Defense System Integrator effort is a FY01 new start
0604851F, ICBM	Project 4210 completes in FY00.
BUDGET ACTIVITY 6: MANAGEMENT AND SUPPORT	H

Project 3321, Joint Modeling and Simulation System (JMASS) funding and responsibility transferred in FY00 to PE 0207601F.

0604256F, Threat Simulator Development

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Program Element	Remarks
BUDGET ACTIVITY 6: MANAGEMENT AND SUPPORT Continued	RT Continued
0604256F, Threat Simulator Development	Project 7500, Foreign Materiel Acquisition and Exploitation (FMA/E) established a funding line in FY00.
0605808F, Development Planning	PE terminated in FY00.
0604759F, Major T&E Investment	Project 4759, two I&M projects started in FY00: Modeling & Simulation T&E Resources (MASTER); and Seeker T&E.
0604759F, Major T&E Investment	Project 4759, the Advanced Range Telemetry Integration (ARTM) was developed by CTEIP (OSD PE 0604940D). The ARTM I&S (Integration and Support) funding in this PE begins in FY01. Integrates the OSD developed ARTM into the Edwards AFB range.
0605854F, Pollution Prevention	Program moved into Budget Activity 4, to PE 0603859F beginning in FY01.
BUDGET ACTIVITY 7: OPERATIONAL SYSTEM DEVELOPMENT	VELOPMENT
0101120F, Advanced Cruise Missile	Project 4798, the AGM-129A Advanced Cruise Missile Service Life Extension Program effort is a FY01 new start.
0207133F, F-16 Squadrons	Project 2671, the Automated Ground Collision Avoidance system, Falcon Star, and Targeting Pod/HARM Targeting Systems efforts are FY01 new starts.
0207141F, F-117A Squadrons	Project 3956, the F-117 Enhanced GBU-27 effort is a FY01 new start.
0303140F, Information Systems Security Program	Project 4585, Cryptologic 2020, will be funded under PE 33401F, Comm Sec, Project 4861, Cryptologic 2020, beginning in FY01.
0303601F, Milsatcom Terminals	Project 2487, the Airborne Wideband Terminal and Ground Multiband Terminal effort are a FY01 new start.
0305205F, Endurance Unmanned Aerial Vehicles	Project 4883 is a FY01 new start. Project 4816 will merge into 4799 in FY00.

INTRODUCTION AND EXPLANATION OF CONTENTS

Program Element	Remarks
BUDGET ACTIVITY 7: OPERATIONAL SYSTEM DEVELOPMENT Continued	VELOPMENT Continued
0305206F, Airborne Reconnaissance System	Project 4882 is a FY01 new start.
0305207F, Manned Reconnaissance system	Project 4820 will be transferred to PE 0305202F beginning in FY01.
0305910F, Spacetrack	Project 4791, the Ground-Based Electro-Optical Deep Space Surveillance Sustainment effort is a FY00 new start.
0401115F, C-130 Airlift Squadrons	Project 4885 is a FY01 new start.
0401130F, C-17 Aircraft	Project 4886 is a FY01 new start.
0404011F, Special Operations Forces	Project 4860 is a FY01 new start.
0708612F, Computer Resources Support Improvement Program	FY01 funding was moved to this PE from PE 0708611F, Project 67309.
1001018F, NATO Joint Stars	Project 0002, the Project Definition of NATO Advanced Trans Atlantic Radar Project effort is a FY01 new start pending Congressional

approval.

PE NUMBER: 0604256F PE TITLE: Threat Simulator Development

	RDT&E BUDGET ITEM JI	JSTIFIC	ATION	USTIFICATION SHEET (R-2 Exhibit)	(R-2 Ex	hibit)		DATE	Februa	February 2000
BUDGET 06 - M	BUDGET ACTIVITY 06 - Management and Support			PE NUMBER 0604256	PE NUMBER AND TITLE 0604256F Threa	PE NUMBER AND TITLE 0604256F Threat Simulator Development	or Deve	opment		
	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	32,054	31,672	34,785	37,990	39,993	42,673	43,516	Continuing	TBD
662907	Electronic Combat Intel Support	1,886	1,708	1,968	1,882	1,913	2,033	2,053	Continuing	TBD
663321	Electronic Warfare Ground Test Resources	30,168	27,610	26,687	29,078	30,893	33,333	33,964	Continuing	TBD
667500	Foreign Material Acquisition/Exploitation	0	2,354	6,130	7,030	7,187	7,307	7,499	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

(U) A. Mission Description

ensure the effective disciplined and efficient testing of AF EW and avionics systems. Each capability or facility improvement is pursued in concert with the others so as architecture, development and improvement of digital EW models, measurement facilities operation and improvements, hardware in the loop test facilities operation and project planning, programming and budgeting, technical oversight, and application of T&E facility I&M. Products include studies, analyses, and related documentation. This PE provides funding to support the acquisition and exploitation efforts of the Foreign Materiel Program, as well as to support EW intelligence efforts, beginning in to avoid duplicate capabilities while at the same time producing the proper mix of test resources needed to support the AF EW Test Process. This PE provides funding and for improvement and modernization (I&M) and application of the test and evaluation (T&E) infrastructure. Support includes requirements definition and analysis, This PE provides funding for the elements necessary to support the AF Electronic Warfare (EW) Test Process. This test process provides a scientific methodology to funding for planning, management, budgetary, and technical support to the Air Force for corporate-level implementation of the Electronic Warfare (EW) Test Process improvements, installed system test facility improvements, and development and improvement of open air threat simulators for flight testing. This PE also provides for the management and technical oversight of implementation activities, the Air Force-led tri-Service effort to establish a common modeling and simulation

(U) B. Budget Activity Justification

This Program Element is in Budget Activity 6, Management Support, because it is a Research and Development (R&D) effort for Improvement and Modernization of T&E capabilities at Air Force Test Centers.

Page 1 of 11 Pages

Exhibit R-2 (PE 0604256F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FION SHEET (R-2 Exhik	oit)	DATE February 2000	y 2000
90 00	BUDGET ACTIVITY 06 - Management and Support	PE NUMBER AND TITLE 0604256F Threat Si	чо тіт∟Е Threat Simulator Development	opment	
9	C. Program Change Summary (\$ in Thousands)	FV 1999	FV 2000	FV 2001	Total Cost
9	Previous President's Budget (FY 2000 PBR)	34,086	32,391	36,848	Total Cost
99	Appropriated Value Adiustments to Appropriated Value	34,582	32,391		
)	a. Congressional/General Reductions	-496	-29		
	b. Small Business Innovative Research	629-			
	c. Omnibus or Other Above Threshold Reprogram	-300	-485		
	d. Below Threshold Reprogram	-873 -180	206-		
	f. Other	201	697		
9	Adjustments to Budget Years Since FY 2000 PBR			-2,063	
9	Current Budget Submit/FY 2001 PBR	32,054	31,672	34,785	TBD
9	Significant Program Changes:				
				יי כ נו הייות אינה היים ביים אינה אינה ביים ביים אינה אינה ביים ביים ביים ביים ביים ביים ביים ביי	70000
		rage 2 01 11 rages		באווטוו א-ב (ד	באוווטונ ה-2 (רב ססט42301)

	RDT&E BUDGET ITEM JU	STIFIC/	ATION S	STIFICATION SHEET (R-2A Exhibit)	(R-2A E	xhibit)		DATE	Februa	February 2000
90 90	BUDGET ACTIVITY 06 - Management and Support			PE NUMBER 0604256	PE NUMBER AND TITLE 0604256F Threa	PE NUMBER AND TITLE 0604256F Threat Simulator Development	tor Devel	opment		PROJECT 662907
	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
662907	07 Electronic Combat Intel Support	1,886	1,708	1,968	1,882	1,913	2,033	2,053	Continuing	TBD
(D)	A. Mission Description This project provides funding to support Foreign Materiel Operational Test and Evaluation (FMOT&E), which ensures the ability of operational commands to test and develop effective Electronic Attack/Electronic Protection (EA/EP) techniques and tactics. Funds are required for: deployment of blue systems to test facilities, travel for personnel to the test sites to evaluate and validate test results real-time, range and laboratory costs; costs for instrumentation of blue systems; contracted engineering support for the conduct of tests and subsequent reporting. Funding for this program is required to prevent future aircraft losses due to improper and inaccurate aircrew tactics (e.g., lack of evasive action or proper tactics training to avoid missile attack).	eriel Operat tion (EA/EP test results r ing. Fundin aining to av	ional Test ar) techniques eal-time, ra g for this pr	nd Evaluatio s and tactics. nge and labo ogram is req	on (FMOT&) Funds are: oratory costs quired to pre-	E), which en required for: s; costs for in vent future a	sures the abi deploymen istrumentatic ircraft losses	ility of opers at of blue sys on of blue sy s due to impi	ational comn stems to test ystems; contr roper and in:	nands to test and facilities, travel acted engineering accurate aircrew
99999	FY 1999 (\$ in Thousands) \$1,571 Funded fighter and bomber testing for foreign material operational exploitation. Extensive evaluations and reports were accomplished. \$236 Funded transport aircraft for foreign material operational exploitation. Extensive evaluations and reports were accomplished. \$79 Funded classified operational assessments for foreign material operational exploitation. Extensive evaluations and reports were accomplished. \$1,886 Total	ting for fore reign mater issessments	ign material ial operation for foreign n	operational ıal exploitati naterial opeı	exploitatior ion. Extensi rational expl	a. Extensive ive evaluation loitation. Ex	evaluations ns and repor tensive eval	and reports ts were acco uations and	were accom) omplished. reports were	plished. accomplished.
99999	FY 2000 (\$ in Thousands) \$1,372 Funds fighter and bomber testing for foreign material operational exploitation. Extensive evaluations and reporting to be accomplished. \$281 Funds transport aircraft for foreign material operational exploitation. Extensive evaluations and reporting to be accomplished. \$55 Funds classified operational assessments for foreign material operational exploitation. Extensive evaluations and reporting to be accomplished. \$1,708 Total	ng for foreig eign materia sessments fo	gn material c Il operationa or foreign ma	perational e I exploitatio aterial opera	exploitation. or. Extensiv ttional explo	Extensive e e evaluations nitation. Exte	valuations a s and reporti ensive evalua	nd reporting ng to be acc ations and re	to be accom complished. eporting to b	ıplished. e accomplished.
99999	FY 2001 (\$ in Thousands) \$1,553 Funds fighter and bomber testing for foreign material operational exploitation. Extensive evaluations and reporting to be accomplished. \$344 Funds transport aircraft for foreign material operational exploitation. Extensive evaluations and reporting to be accomplished. \$71 Funds classified operational assessments for foreign material operational exploitation. Extensive evaluations and reporting to be accomplished. \$1,968 Total	ng for foreig eign materia sessments fc	gn material c l operationa r foreign m	operational e I exploitatio aterial opera	exploitation. on. Extensiv ttional explo	Extensive e e evaluations vitation. Exte	valuations a s and reporti ensive evalu	nd reporting ng to be aco ations and re	to be accom complished. eporting to b	ıplished. e accomplished.
9	B. Project Change Summary None									
<u>С</u>	Project 662907		Page	Page 3 of 11 Pages	SS			Ē	thibit R-2A (Exhibit R-2A (PE 0604256F)
				015						

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	JUSTIFI	CATION	SHEET (F	R-2A Exh	libit)		DATE February 2000	y 2000
90 308	BUDGET ACTIVITY 06 - Management and Support			PE NUMBER AND TITLE 0604256F Threa	AND TITLE Threat S	PE NUMBER AND TITLE 0604256F Threat Simulator Development	Jevelopm		PROJECT 662907
()	(U) C. Other Program Funding Summary (\$ in Thousands) EY 1999 Extrad Ferinals	iousands) FY 2000 Fetimate	FY 2001 Ferimate	FY 2002 Ferimate	FY 2003 Estimate	FY 2004 Ferimate	EY 2005 Fertimate	Cost to	Total Cost
99	AF RDT&E Other APPN None								
<u>E</u>	D. Acquisition Strategy Not applicable.								
3	E. Schedule Profile			Y 199		FY 2000	0007	EY	
9	;	:		. 3	4	7	ε 4	. 5	5
	Not applicable. Discrete tasks vary depending on availability of FMA hardware and exploiation schedules. The annual budget is based on supporting up to eight opportunities for operational units to conduct quick look assessments of available FMA.	n availability ck look asses	of FMA hard sments of avail	ware and explo lable FMA.	iation schedul	les. The annua	l budget is ba	sed on supporting	up to eight
	Project 662907		Page	Page 4 of 11 Pages				Exhibit R-2A (I	Exhibit R-2A (PE 0604256F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	STIFIC/	ATION S	SHEET (R-2A E	xhibit)		DATE	February 2000	y 2000
вирсет 06 - М а	BUDGET ACTIVITY 06 - Management and Support			PE NUMBER AND TITLE 0604256F Threa	AND TITLE	t Simulat	PE NUMBER AND TITLE 0604256F Threat Simulator Development	opment		PROJECT 663321
	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
663321	Electronic Warfare Ground Test Resources	30,168	27,610	26,687	29,078	30,893	33,333	33,964	33,964 Continuing	TBD

(U) A. Mission Description

throughout the weapon system acquisition process, and conduct test and evaluation (T&E) effectively and efficiently, a spectrum of T&E capabilities from modeling and IMASS architecture. From FY00 and beyond, JMASS model development funds will be programmed under other Program Elements. The EW T&E M&S program will Warfare Evaluation Simulator (AFEWES) and the Digital Integrated Air Defense System (DIADS), provide the ability to realistically evaluate hardware components and cockpits being developed under PE64759. This program will also provide the capability to link the high fidelity cockpits into the information battlespace via High Level simulated weapon systems against manned hardware threat representations throughout the acquisition process. AFEWES provides simulations of advanced Infrared (IR) provides algorithm based enemy command and control (C2) capabilities plus early warning radar detection and limited ground control intercept features and also allows man-in-the-loop interaction for the enemy C2 positions. The Electronic Combat Integrated Test (ECIT) project upgrades the AF Hardware-in-the-Loop (HITL), System when installed on its host aircraft, both prior to and throughout the flight test program. The goal of the ECIT upgrade is to integrate coherent EW threat stimulators into equipment in support of the F-22's Integrated Hardware-In-The-Loop Avionics Test (IHAT) capability. The IHAT capability is being transferred to Edwards AFB, CA avionics with the benefit of a laboratory environment. The AF ISTF consists of a large, instrumented, anechoic chamber which provides for evaluation of EW systems from Marietta, GA. In FY 00, the Air Warfare Mission Simulator (AWMS) program will provide the electronic warfare capability into the high fidelity reconfigurable AFB, NM, to support radar cross section (RCS) measurement requirements of DoD customers, with either conventional or stealth systems. The Air Force Electronic tri-service project to establish a common, DoD-wide, digital simulation architecture and set of models in support of T&E. FY00 funding for the JMASS architecture and software development transitioned to PE 27601F. Prior to FY00, the EW T&E Modeling & Simulations (M&S) program provided funds to support Missile and lead correlation, verification and validation activities of integrated simulations of validated models across the EW test facilities using the Silver Bullet measurement application of EW T&E facilities, including studies, analyses, and related documentation. The Joint Modeling and Simulation System (JMASS) is an Air Force-led, Space Intelligence (MSIC) and National Air Inteligence Center (NAIC) in the development of Electronic Combat (EC) capable threat engagement models using the capability. The National RCS Test Facility - NRTS (formerly Radar Target Scatter (RATSCAT)) upgrade project provides improvements to the NRTS at Holloman & Radio Frequency (RF) Surface-to-Air Missiles (SAMs) and Air-to-Air Missiles (AAMs), IR/ Ultra-violet (UV) & RF missile warning, end-to-end testing of the missile warning/IR Countermeasure function; integration of actual threat hardware and ground clutter into advanced threat RF and IR missile simulations. DIADS Integration Labs (SIL), and Installed System Test Facility (ISTF) at Edwards AFB, CA. The HITL and SILs at Edwards allow for the stimulation of real aircraft the ground test facilities at Edwards and modernize instrumentation/test operation capabilities. In FY 99 ECIT began a 3-year effort to fund the purchase of EW The AF requires a comprehensive set of test facilities to implement the Air Force Electronic Warfare (EW) Test Process. To manage program risk effectively simulation through open-air ranges is required. The EW Test Process Support task provides for investment management, coordinated technical oversight, and Architecture (HLA)

Page 5 of 11 Pages Exhibit R-2A (PE 0604256F)	100
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	RDT&	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit) February 2000	y 2000
90 00	BUDGET ACTIVITY 06 - Management and Support	PENUMBER AND TITLE OCCUPATION OF THE OCCUPATION OF THE OCCUPATION	PROJECT 663321
(£)	A. Mission Description Continued	on Continued	
99	FY 1999 (\$ in Thousands) \$527	Test Process Support. Cond	rastructure.
<u>(</u>	\$7,500	Completed cost-benefit analysis of digital modeling and simulation (M&S) in support of the EW Test Process. JMASS. Established the JMASS Joint Program Office (JPO). Initiated development of joint version of the JMASS software, which affords compatibility with the DoD High-Level Architecture (HLA). Completed transition of JMASS to PCs and UNIX computer platforms. Continued development and integration of JMASS-compliant threat models to support the needs of various DoD customers. The EW Test and Evaluation	ich affords rms. Continued nd Evaluation
		Modeling and Simulation (EW 1&E 1M&S) completed funding the intelligence agencies to develop JMASS compilant, digital inteat models required by the B-1B DSUP customer to support the EW Test Process. Specifically the intel agencies completed development of the JMASS RF environment model, completed development of the Surface-to-Air Digital Simulator (SADS) 2c/c, finished development of an Air Intercept / Air-to-Air Missile (AI/AAM) model, and the JMASS program office established a JMASS library. Began development of verification and	reat models Ithe JMASS RF ir Intercept /
		validation process for integrated simulations configured to support development and operational testing. Began correlation process development and correlation implementation between EW test facilities being supported by Silver Bullet.	ess development
<u>(C</u>	\$1,774	RATSCAT Upgrades. Achieved Initial Operational Capability (IOC) of BICOMS Mobile Radar. Integrated and achieved IOC of RATSCAT Advanced Measurement System (RAMS) Radar Replacement. Began development on improved RAMS pylon.	RATSCAT
9	\$2,486		ued development
9	\$6,097		Began upport of AF,
9	\$11,784	Army, Navy, and non-DoD test customers. ECIT. Continued Infrastructure and Generic Test Capability (I>C), which provides RF simulatuion capability between the I>C and the CTEIP-funded Generic Radar Target Generator (GRTG), Infrared Sensor Simulator (IRSS), and Communications-Navigation-Identification (GNTG), simulator to summer F-27 and other advanced unappression restance requirements.	>C and the lentification
9	(U) \$30,168	and Controls portion of the L&TGC effort. Began initial planning and purchase of EW equipment in support of the F-22's Integrated Hardware-in-the-loop Avionics Test (IHAT) capability at Edwards AFB. Total	ated
п.	Project 663321	Page 6 of 11 Pages	Exhibit R-2A (PE 0604256F)

	RDT&	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	DATE February 2000
90 90	BUDGET ACTIVITY 06 - Management and Support	PE NUMBER AND TITLE 10604256F Threat Simulator Development	PROJECT 663321
(£)	A. Mission Description Continued		
9	FY 2000 (\$ in Thousands)	ands)	
9	\$896	EC Test Process Support. Conduct requirements analyses and other studies in support of Air Force investments in EW test infrastructure. Provide systems engineering/technical assistance (SETA) support for Air Force implementation of the EW Test Process, including improvement and modernization (I&M) of the EW test infrastructure.	ce investments in EW test infrastructure. of the EW Test Process, including improvement
<u>(</u>	\$3,947	EW Test and Evaluation Modeling and Simulation (EW T&E M&S). Continue development of verification and validation process for integrated simulations configured to support development and operational testing. Continue correlation process development and correlation implementation between EW test facilities being supported by Silver Bullet. Begin study of requirements to migrate realistic sensor information from the EC environment into cocknit simulators in support of the Air Warfare Mission Simulator (AWMS) program	rerification and validation process for integrated cess development and correlation irrements to migrate realistic sensor information or (AWMS) program
99	\$1,959 \$5,872	NRTF Upgrades. Complete development on RAMS Pylon. Complete industry partnership efforts with first major EW supplier. AFEWES. Continue AFEWES operation in support of Air Force, Army, Navy, and non-DoD test customers to include defining requirements for upgrades to the IR laboratory. Complete development of Advance Simulator Modifications (SAM-C2), and begin development of advanced RF semi-active SAM simulations (SAM-D).	ts with first major EW supplier. t customers to include defining requirements for M-C2), and begin development of advanced RF
(D)	\$2,772	DIADS. Continue providing mission level simulation for evaluating the survivability of aircraft penetrating an enemy air defense system. Continue verification and validation efforts required for achieving IOC of DIADS baseline. Continue development of external linking and BLUE IADS capabilities, in support of AF, Army, Navy, and non-DoD test customers. Begin support of major OT customers with RED IADS scenario generation and execution.	penetrating an enemy air defense system. tinue development of external linking and ipport of major OT customers with RED IADS
<u>(a)</u>	\$12,164	ECIT. Complete IOC of Infrastructure and Generic Test Capability (I>C), which provides RF simulation capability between the I>C and the CTEIP-funded Generic Radar Target Generator (GRTG), Infrared Sensor Simulator (IRSS), and Communications-Navigation-Identification (CNI) simulator, to support F-22 and other advanced weapon systems requirements. Begin requirements definitions and acquisition planning to fully integrate the suite of simulators/stimulators into a coherent multi-spectral test enviornment. Continue purchase and integration of EW equipment in support of the F-22's Integrated Hardware-in-the-loop Avionics Test (IHAT) canability	is simulation capability between the I>C and and Communications-Navigation-Identification irements definitions and acquisition planning to Continue purchase and integration of EW illev
<u>e</u>	\$27,610	Total	
99	FY 2001 (\$ in Thousands) \$909 EC Pro	ands) EC Test Process Support. Conduct requirements analyses and other studies in support of Air Force investments in EW test infrastructure. Provide systems engineering/technical assistance (SETA) support for Air Force implementation of the EW Test Process, including improvement and modernization (I&M) of the EW test infrastructure.	ce investments in EW test infrastructure.
9	\$3,919	EW Test and Evaluation Modeling and Simulation (EW T&E MS). Continue development of verification and validation process for integrated simulations configured to support development and operational testing. Continue correlation process development and correlation implementation between EW test facilities being supported by Silver Bullet. Complete AWMS requirement study and develop acquisition	ification and validation process for integrated cess development and correlation requirement study and develop acquisition
Ā	Project 663321	Page 7 of 11 Pages	Exhibit R-2A (PE 0604256F)

	RDT&	RDT&E BUDGET ITEM JUS	M JUSTIFI	CATION	TIFICATION SHEET (R-2A Exhibit)	8-2A Exh	ibit)	ď	DATE February 2000	ry 2000
90 -	BUDGET ACTIVITY 06 - Management and Support	and Support			PE NUMBER AND TITLE 0604256F Threa	PE NUMBER AND TITLE 0604256F Threat Simulator Development	imulator D	evelopme	int	PROJECT 663321
9	A. Mission Description Continued	ition Continued								
5	FY 2001 (\$ in Thousands) Continued	sands) Continued								
Œ	\$1 692	strategy to provide realistic EC sensor information into cockpit simulators. NRTF Unorades Enhance efficiency of onerations and accuracy of measurements. Expand partnerships with major industry FW sumpliers.	istic EC sensor i	nformation int	o cockpit simu	lators.	Exnand partn	erchine with n	naior industry FW	V sumpliers
3	\$6,092	AFEWES. Continue AFEWES operation in support of Air Force, Army, Navy, and non-DoD test customers to include initiation of IR lab	EWES operatio	on in support of	f Air Force, Ar	my, Navy, and	non-DoD test	customers to	include initiation	of IR lab
		upgrade effort. Complete development of advanced simulator modifications (SAM-C2). Complete development of advanced RF semi-active SAM simulation (SAM-D), and begin development of a second advanced RF semi-active SAM simulation (SAM-F).	ete development -D), and begin d	of advanced sulevelopment of	imulator modif	ications (SAM	-C2). Comple active SAM si	te developmer imulation (SA	nt of advanced RI	F semi-active
9	\$3,451	DIADS. Continue providing mission level simulation for evaluating the survivability of aircraft penetrating an enemy air defense system by	iding mission le	vel simulation	for evaluating	the survivabili	ity of aircraft I	enetrating an	enemy air defens	se system by
		updating the IADS scenario with current intel data. Complete verification and validation efforts required to achieve IOC of DIADS baseline. Continue development of external linking and BLUE IADS capabilities, in support of AF, Army, Navy, and non-DoD test customers.	nario with currer of external linkin	nt intel data. C ng and BLUE]	omplete verific IADS capabilit	ation and validies, in support	dation efforts 1 of AF, Army,	required to acl Navy, and no	hieve IOC of DIA n-DoD test custor	DS baseline. mers.
9	\$10,624	ECIT. Complete FOC of Infrastructure and Generic Test Capability (I>C), which provides RF simulation capability between the I>C and	of Infrastructure	and Generic To	est Capability (I>C), whic	th provides R	simulation c	apability between	the I>C and
		the CTEIP-funded Generic Radar Target Generator (GRTG), Infrared Sensor Simulator (IRSS), and Communications-Navigation-Identification (CNI) simulator, to support F-22 and other advanced weapon systems requirements. Begin requirements definitions and acquisition planning to	eric Radar Targ port F-22 and of	et Generator ((GRTG), Infrare veapon systems	d Sensor Simu	ılator (IRSS), a	and Communi rements defin	ir Target Generator (GRTG), Infrared Sensor Simulator (IRSS), and Communications-Navigation-Identification and other advanced weapon systems requirements. Begin requirements definitions and acquisition planning to	on-Identification
		fully integrate the suite of simulators/stimulators into a coherent multi-spectral test environment. Complete purchase of EW equipment in sunnort of the F-20's Integrated Hardware-in-the-loom Avionics Test (IHAT) canability	of simulators/st	imulators into	a coherent mul	ti-spectral test	environment.	Complete pu	rchase of EW equ	uipment in
9	\$26,687	Total				andra (vv vv)	. (
9	B. Project Change Summary	Summary								
9	C. Other Program J	C. Other Program Funding Summary (\$ in Thousands)	Thousands)	FV 2001	FV 2002	FV 2003	FV 2004	FV 2005	of to	Total Cost
		Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	70141
9	AF RDT&E								•	
9	Other APPN									
9	Related RDT&E:	 								
9	PE 0604759F, Major T&E	r T&E								
£	Investment	1.0 F 1.0								
<u> </u>	re voot 940D, Central 1 & Investment Program	rai 1 & E								
9	D. Acquisition Strategy	tegy	•	•		;				
	Contracts funded from	Contracts funded from this program are predominately awarded on the basis of full and open competition.	nınately awarded	d on the basis (of full and oper	competition.				
Ā	Project 663321			Page	Page 8 of 11 Pages				Exhibit R-2A (PE 0604256F)	PE 0604256F)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	SHEET (R-2A	Exhibit		DATE		February 2000	
BUDGET ACTIVITY 06 - Management and Support	PE NUMBER AND TITLE 0604256F Threa	∟E eat Simu	ਪਹ ਸਾਸ∟E Threat Simulator Development	pment		PROJECT 663321	ЈЕСТ 321
(U) E. Schedule Profile	EX 1999 2 3 4	1	FY 2000 2 3	4	1	FY 2001 2 3	4
* Stablish JMASS JPO (U) ECIT Infrastructure and Generic Test Capability (I>C) IOC (U) ECIT SIL Integration (U) ECIT SIL Integration (U) ECIT BAF Integration (U) Digital Integrated Air Defense System Baseline Start/Complete (U) AFEWES SAM-C Upgrade (U) AFEWES SAM-E Dev Complete (U) AFEWES SAM-F Dev Start (U) AFEWES IR Lab Upgrade (U) EW T&E M&S Threat Models Complete (U) EW T&E M&S Threat Models Complete (U) RAMS Replacement Radar IOC (U) RAMS Pylon IOC (U) RAMS Pylon FOC	× * * *	*	× ×	× ×	×	× ×	××
Project 663321	Page 9 of 11 Pages			ÚÌ	xhibit R-2	Exhibit R-2A (PE 0604256F)	256F)

	RDT&E	E BUDGET ITEM JU		STIFICATION SHEET (R-2A Exhibit)	HEET (R-2A E	xhibit)		DATE	Februa	February 2000
90 - 90	BUDGET ACTIVITY 06 - Management and Support	nd Support			PE NUMBER AN 0604256F	PE NUMBER AND TITLE 0604256F Threa	וס דודר I Threat Simulator Development	tor Deve	opment		PROJECT 667500
	COST (\$ i	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
667500		Foreign Material Acquisition/Exploitation	0	2,354	6,130	7,030	7,187	7,307	7,499	Confinuing	TBD
<u>(a)</u>	A. Mission Description This project is establishe materiel. Items consider Acquisition (FMA) list e MAJCOM commanders MAJCOM then approves acquisitions. The list is a	A. Mission Description This project is established for the specific purpose of supporting the USAF requirements for Foreign Materiel Program in the acquisition and exploitation of foreign materiel. Items considered for these Foreign Materiel Acquisition and Exploitation (FMA&E) funds are included in the prioritized Air Force Foreign Materiel Acquisition (FMA) list established each year. Each MAJCOM prepares and approves a Foreign Materiel - Mission Need Statement for each requirement. Annually, the MAJCOM commanders establish a list of their top 20 requirements. The MAJCOM's requirements list are then integrated into an Air Force requirement list. Each MAJCOM then approves the AF list and requirements, and final validation comes from the Air Force Vice Chief of Staff. Exploitations are based on and driven by acquisitions. The list is classified secret. The USAF is tasked by OSD to be the DoD Executive Agent for all threat aircraft, air-to-air missiles, and early warning radars. As the Executive Agent, the AF is tasked to acquire, exploit and provide data to all DoD components.	supporting that Acquisition AAJCOM preson I requirement is, and final vist tasked by exploit and p	ne USAF rect and Exploit pares and age is. The MAJ alidation col OSD to be the rovide data to	quirements fation (FMA) proves a Fc COM's requ mes from th he DoD Exe to all DoD c	for Foreign lackE) funds: Treign Mater Tre	Materiel Programe included riel - Mission at are then int Vice Chief of the for all three the for all three the for all three the for all three for the for all three for the for all three for all th	gram in the in the in the prioring the prioring the prioring of State (egrated into of Staff. Expandations) at aircraft, a	acquisition a tized Air Forment for each an Air Force ploitations and ir-to-air missing in-to-air missing acquisitions.	und exploitatirce Foreign ch requireme ce requireme re based on g	Supporting the USAF requirements for Foreign Materiel Program in the acquisition and exploitation of foreign Acquisition and Exploitation (FMA&E) funds are included in the prioritized Air Force Foreign Materiel AJCOM prepares and approves a Foreign Materiel - Mission Need Statement for each requirement. Annually, the requirements. The MAJCOM's requirements list are then integrated into an Air Force requirement list. Each s, and final validation comes from the Air Force Vice Chief of Staff. Exploitations are based on and driven by is tasked by OSD to be the DoD Executive Agent for all threat aircraft, air-to-air missiles, and early warning radars. xploit and provide data to all DoD components.
999	FY 1999 (\$ in Thousands) \$0 No \$0 Tot Not applicable.	<u>ands)</u> No Activity Total									
55555	FY 2000 (\$ in Thousands) \$1,765 Fun \$350 Fun \$239 Fun	<u>ands)</u> Funds the acquisition of Foreign Materials IAW the prioritized Air Force Foreign Material Acquisition list; subject to assets availability. Funds the exploitation of acquired Foreign Materials IAW prioritized lists and specific exploitation plans. Funds the operations and maintenance of the specialized Foreign Material assets. Total	gn Materials ired Foreign itenance of th	IAW the pri Materials IA e specialize	oritized Air sW prioritiz d Foreign M	Force Forei ed lists and faterial asset	gn Material . specific expl ts.	Acquisition oitation plan	list; subject ns.	to assets ava	ulability.
<u> </u>	FY 2001 (\$ in Thousands) \$2,595 Fun \$2,957 Fun \$578 Fun \$6,130 Tot	<u>ands)</u> Funds the acquisition of Foreign Materials IAW the prioritized Air Force Foreign Material Acquisition list; subject to assets availability. Funds the exploitation of acquired Foreign Materials IAW prioritized lists and specific exploitation plans. Funds the operations and maintenance of the specialized Foreign Material assets.	gn Materials ired Foreign ıtenance of th	IAW the pri Materials IA e specialize	oritized Air sW prioritiz d Foreign M	Force Forei ed lists and faterial asset	gn Material . specific expl is.	Acquisition oitation plan	list; subject ns.	to assets ava	ulability.
9	B. Project Change Summary Significant Program Changes:	Summary Changes:									
ď	Project 667500			Page 1	Page 10 of 11 Pages	se			Ë	hibit R-2A (Exhibit R-2A (PE 0604256F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	SET ITEN	M JUSTIF	ICATION	SHEET (R-2A Ext	nibit)	<u>a</u>	DATE February 2000	7000
98 199	вирсет астіліту 06 - Management and Support	ort			PE NUMBER AND TITLE 0604256F Threa	AND TITLE F Threat 8	PE NUMBER AND TITLE 0604256F Threat Simulator Development	Developme		PROJECT 667 500
(<u>a</u>)	C. Other Program Funding Summary (\$ in Thousands) FY 1999 EY 1999 Actual Ectimate	nmary (\$ in EY 1999	Chousands) FY 2000 Fetimate	FY 2001 Estimate	FY 2002 Ferimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Ferimete	Cost to	Total Cost
99	AF RDT&E Other APPN None.									
9	D. Acquisition Strategy Not applicable.									
<u>G</u>	E. Schedule Profile				FV 1999		řΥ	FV 2000	Ā	FV 2001
(I)				1	2 3	4	1 2	3 4	1 2	3 4
9	Not applicable. Details are classified and are reported through other channels.	fied and are re	sported throug	h other channel	ls.					
ц.	Project 667500			Page	Page 11 of 11 Pages	S			Exhibit R-2A (PE 0604256F)	PE 0604256F

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	RDT&E BUDGET ITEM JU	STIFIC	ATION	JSTIFICATION SHEET (R-2 Exhibit)	(R-2 Ex	chibit)		DATE	Februa	February 2000
90 90	BUDGET ACTIVITY 06 - Management and Support			PE NUMBER AN 0604258F	PE NUMBER AND TITLE 0604258F Targe	мр тіт∟е Target Systems Development	s Develo	ppment		РRОЈЕСТ 662459
	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
662459	59 Target Payloads	6,343	0	191	192	193	1,842	1,851	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0
9	A. Mission Description Aerial Targets are used to determine air-to-air weapons effectiveness and mission proficiency of our tactical systems against enemy aircraft. The overall objective is to improve air-to-air weapons systems accuracy and reliability by developing improved aerial target systems for Air Force weapons system test and evaluation. The program develops full-scale and subscale aerial targets and target control systems. Specialized target payload subsystems are developed for full-scale and subscale targets for missile scoring, electronic and infrared (IR) countermeasures, and radar and IR signature augmentation. Electronic countermeasures and infrared countermeasures being developed include chaff and flare dispenser systems. The Drone Radio Frequency (RF) Electronic Enhancement Mechanism (DREEM) is being developed to provide subscale radar cross section (RCS) enhancement to replicate full size threat aircraft.	ns effectiven ability by de s and target) counterme: are dispense	ess and mis veloping irr control syst asures, and ir r systems.	sion proficie nproved aerii ems. Specia radar and IR The Drone F icate full sizu	ancy of our trail target syst lized target signature an Radio Freque e threat aircs	actical syster cems for Air I payload subs ugmentation. ency (RF) E	ns against e Force weapo systems are Electronic lectronic En	memy aircra ons system t developed fi countermea	ft. The oversest and evaluor full-scale issures and in Mechanism (all objective is to tation. The and subscale frared (DREEM) is being
5555555	FY 1999 (\$ in Thousands) \$412 Continued Contractor - Support & Management \$225 Continued Travel, Training and Second Destination Transportation - Support & Management \$232 Continued Management Information Systems (MIS), Communications and Assessment - Support & Management \$586 Completed DREEM Demonstration Validation Testing \$4,818 Total	t & Manage I Second De nation Syster ation Valida	ment stination Tr ns (MIS), C tion Testing	ansportation Communicati	i - Support &	t Manageme sessment - St	nt upport & Ma	anagement		
333	0 (\$ in Thousar	ıcy program	s under \$1 r	nillion.						
99999	FY 2001 (\$ in Thousands) \$129 Continue Support & Management \$37 Continue Travel & Training Support & Management \$25 Continue MIS, Communication and Assessment - Support and Management \$191 Total	ent pport & Ma 1 and Assess	nagement ment - Supj	port and Maı	nagement					
ட	Project 662459		Page	Page 1 of 3 Pages	S			LU.	Exhibit R-2	Exhibit R-2 (PE 0604258F)
				300						

	RDT&E BUDGET ITEM JU		STIFICATION SHEET (R-2 Exhibit)	I SHEET	(R-2 Exhi	bit)		DATE February 2000	v 2000
90 06	BUDGET ACTIVITY 06 - Management and Support			PE NUMBER AND TITLE 0604258F Targe	PE NUMBER AND TITLE 0604258F Target Systems Development	ystems De	velopme	nt	PROJECT 662459
(D)	B. Budget Activity Justification This program is in budget activity 6 - Management Support because it provides overall support to research and development activities.	gement Support b	ecause it provie	des overall sup	port to researcl	h and developr	nent activities	*	
9	C. Program Change Summary (\$ in Thousands)	(sands)			FV 1999	FV 2000		FV 2001	Total Cost
93	Previous President's Budget (FY 2000 PBR)				6,572	192	•	192	TBD
<u> </u>	Appropriated value Adjustments to Appropriated Value a Congressional/General Reductions				0,000 -75				
	b. Small Business Innovative Research				-177				
	c. Omnibus or Other Above Threshold Reprogram d Below Threshold Reprogram	ogram			-17				
	e. Rescissions f Other				-54				
99	Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR	0 PBR			6,343	0	_	-1 191	TBD
<u>(</u>	Significant Program Changes: FY99 Congressional action added \$5M for the Army Big Crow prog FY00 Congress zeroed-out small legacy programs under \$1 million.	the Army Big Cre grams under \$1 r	Big Crow program. Funds were passed from this PE to the Army. ler \$1 million.	unds were pass	ed from this Pl	E to the Army.			
9	D. Other Program Funding Summary (\$ in Thousands) EX 1999 EX 2000 Actual Estimate	n Thousands) EY 2000 Estimate	Extimate	Extimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to	Total Cost
9	PE35116F: Appropriation: Missile Procurement, AF Budget Activity: 14 Program Title: Target Drones								
993	WSC MQM107 (MQM-107E) 3,793 WSC: M04AQF (QF-4) 21,508 Spares: BQM-34, QF-4, 173 MQM-107							Continuing Continuing Continuing	TBD TBD TBD
Ф.	Project 662459		Pag	Page 2 of 3 Pages				Exhibit R-2 (PE 0604258F)	E 0604258F)

	RDT&E BUDGET ITEM JU		-ICATION	STIFICATION SHEET (R-2 Exhibit)	R-2 Exh	nibit)	/0	DATE February 2000	y 2000
90 ana	BUDGET ACTIVITY 06 - Management and Support			PE NUMBER AND TITLE 0604258F Targe	AND TITLE Target	PE NUMBER AND TITLE 0604258F Target Systems Development	evelopmer	ıt	PROJECT 662459
(£)		Thousands) FY 2000 Estimate	FY 2001 Estimate	FY 2002. Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
<u> </u>	PE35116F: Appropriation: Aircraft Procurement, AF Budget Activity: 10 Program Title: Target Drones WSC: 10TRGT Spares: 16TRGT 0	31,332 885	32,915 610	36,688 729	37,217 973	46,874	39,181 978	Continuing Continuing	TBD TBD
9	E. Acquisition Strategy The acquisition strategy is competitive, cost plus contracts.	us contracts.							
9	F. Schedule Profile			FY 1999 2 3	4	FY 2000	2 <u>000</u> 3 4	EY 1 2	<u>FY 2001</u> 2 3 4
55555555	QF-4 Follow-on Production Options DREEM - Dem Val Testing MQM-107E - First Delivery MQM-107E - 1OC Non Developmental Item (NDI) SSAT BQM-34 - Contract Award - First Delivery - IOC	45	*	* * *		× × ××		×	
ц.	Project 662459		Pag	Page 3 of 3 Pages				Exhibit R-2 (PE 0604258F)	E 0604258F)

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RDT&E BUDGET ITEM JI	USTIFICATION SHEET (R-2 Exhibit)	ATION	SHEET	(R-2 Ex	(hibit		DATE	Februa	February 2000
BUDGET ACTIVITY 06 - Management and Support	-		PE NUMBER 0604759	PE NUMBER AND TITLE 0604759F Major	PE NUMBER AND TITLE OG04759F Major T&E Investment	estment			PROJECT 664597
COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
664597 Air Force Test Investments	37,995	56,659	54,057	51,136	50,053	60,502	70,242	70,242 Continuing	ТВО
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

(U) A. Mission Description

Armament Center (AAC), Arnold Engineering Development Center (AEDC), Air Force Flight Test Center (AFFTC), and the Space and Missile Systems Center's Test & seeker technology and capabilities drive the requirement for improvement in missile seeker test capabilities such as the Guided Weapon Evaluation Facility (GWEF) and modernization requirements as defined through the AF Test Investment Planning & Programming Process. Also, all projects have been reviewed through the tri-Service the Data Acquisition and Processing System (DAPS) and Computer Aided Modernization Project (CMP) projects. Test investment activities are also funded at the Joint planned phasing of improvement and modernization efforts. The test capabilities at these locations enable testing through all phases of weapon system acquisition from significant differences in funding from one year to the next. As such, the changes in funding from year to year do not necessarily indicate program growth but rather a Further, each project has its own planning, development, equipment acquisition/facility construction, equipment installation, and checkout phases which often requires and Edwards Air Force Bases; and advances in computer capabilities, which will enhance efficiencies in data collection, analysis, and distribution, will be exploited in Reliance effort (to communicate AF efforts to the other Services and avoid unwarranted duplication of effort) and are documented in the Test Capability Master Plans. Evaluation Directorate (SMC/TE). The purpose is to help test organizations keep pace with emerging weapon system technologies. For example, advances in missile the Seeker T&E projects; advances in the Global Positioning System (GPS), providing greater time-space-position accuracy, will be integrated into the ranges at Eglin system concept exploration through component and full scale integrated weapon system testing to operational testing. These test organizations have over \$10 billion worth of unique test facilities/capabilities. They are a national asset operated and maintained by the Air Force for DoD test and evaluation missions, but they are This program element provides planning, improvements, and modernization for test capabilities at four Air Force test organizations: 46 Test Wing of the Air Program Office (JPO) for Test and Evaluation (T&E). The fluctuations in the funding at these locations are due to changing priorities in the improvement and available to others having a requirement for their unique capabilities.

capability; and determines target/test item spectral signatures. The Guided Weapon Evaluation Facility (GWEF) provides a full spectrum, multifunctional seeker/sensor laboratory test capability for all guided weapons. Common Airborne Instrumentation System (CAIS) Integration provides standardized airborne test instrumentation to enhance interoperability and commonality. Global Positioning System (GPS) Range Systems will provide a major improvement for Time-Space-Position-Information Command, Control, Communications, Computers and Intelligence (C41) systems, and target acquisition and weapon delivery systems; provides a climatic simulation (TSPI) at all Major Range and Test Facility Bases (MRTFB) and specifically at the Eglin Ranges for munitions testing. C4I Test Capabilities Upgrade will provide 46 TW, located at Eglin AFB, FL, conducts and supports developmental test and evaluation and operational test and evaluation of non-nuclear air armaments,

Project 664597

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Exhibit R-2 (PE 0604759F)

RDT&E BUDGET ITEM JUSTIFICATION	STIFICATION SHEET (R-2 Exhibit)	DATE February 2000
VINTORTACTIVITY	DE NI IMPERANDITIES	TOTION
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6 - Management and Support	0604759F Major T&E Investment	664597
D A Mission Description Continued	-	

real-time central mission control and analysis. Multispectral Missile Engagement Hardware-in-the-Loop (HITL) Test provides a capability to support multiple and wide for three focus sites to support armament/munitions and C4I testing. Seeker T&E will upgrade unique Electro-Optical/Infrared/Millimeter Wave (EO/IR/MMW) field (PRIMES) facility conducts preflight test and evaluation of total integrated weapon systems in a secure anechoic chamber. The Armament Systems Test Environment connectivity to existing capabilities and add needed networks and hardware to develop a C4I test bed. The Preflight Integration of Munitions and Electronic Systems (ASTE) Range Systems effort upgrades instrumentation of the major data collection systems supporting open air testing. Mission Control/Data Analysis provides for field-of-view missile engagements incorporating multispectral stimulators. The Santa Rosa Island Reconstitution effort will provide hardware-in-the-loop equipment measurement capabilities to support tri-Service smart weapons development. These projects ensure test center technology is compatible with weapon systems to be tested such as AMRAAM, JDAM, ASRAAM, AGM-130, JTIDS, JSTARS, Combat Talon, etc.

together with their propulsion systems. The AEDC Data Acquisition and Processing System (DAPS) provides processing capability for advanced turbine engine testing sustains long-term operation of tunnels 16T and 16S to meet transonic/supersonic test needs. The Improve Turbine Engine Structural Integrity project will provide new AEDC, located at Arnold AFB, TN, provides ground environmental test support for DoD aeronautical, missile, and space programs. The center has 53 test facilities state-of-the-art structural test monitoring and data analysis systems to support turbine engine structural tests to detect and analyze high cycle fatigue. The Hypersonic for programs like the F-22. This effort also upgrades data systems for the arc heaters and hypervelocity gun facility for Theater High Altitude Air Defense (THAAD) providing: aerodynamic testing of scale model aircraft, missile, and space systems; testing of large and full-scale satellites, sensors, and space vehicles in a simulated testing. Inefficiencies in these current data systems result in increased program costs and schedule delays. The Computer Aided Modernization Project (CMP) will provide increased capability for data processing and storage and provide wider availability of workstations. The Propulsion Wind Tunnel (PWT) Upgrades project space environment; altitude environmental testing for aircraft, missile, and spacecraft propulsion systems; and testing of large-scale models such as space boosters Capability Development project provides for the studies and analysis of the hypersonic wind tunnel requirements definition and program planning.

Data Acquisition and Processing Systems (ADAPS) project provides an integrated capability to satisfy real-time, first generation, post-test data processing, archival, and aerospace research vehicles, uninhabited aerial vehicles, cruise missiles, parachutes delivery/recovery systems, and cargo handling systems. The AF Common Airborne display requirements of the next decade. The developmental approach is directed towards providing a high degree of interoperability between systems and components adherence to Air Force and DoD guidelines. The technologies being developed under ADAPS have the potential to satisfy data processing and display needs at various multi-Service test ranges. The Flight Simulation Modernization project will upgrade the Test and Evaluation Modeling and Simulation (TEMS) facility to meet future Simulation (TEMS) facility with subsystem models to build future simulations and the tools to validate real-time modeling with ground tests and open-air range flight AFFTC, located at Edwards AFB, CA conducts and supports developmental test and evaluation and operational test and evaluation of aircraft and aircraft systems, equipment, develop and integrate supporting instrumentation equipment and systems to provide a full airborne instrumentation operational capability. The Advanced Instrumentation System (CAIS) Integration & Support (I&S) supports DoD objectives for interoperability/commonality. The goal of CAIS I&S is to integrate CAIS man-in-the loop simulator requirements. The Modeling and Simulation T&E Resources (MASTER) project will provide the Test and Evaluation Modeling and

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Exhibit R-2 (PE 0604759F)

	RDT&	RDT&E BUDGET ITEM JUSTIFICATION	STIFICATION SHEET (R-2 Exhibit)	DATE February 2000
- 90)	BUDGET ACTIVITY 06 - Management and Support	d Support	PE NUMBER AND TITLE 0604759F Major T&E Investment	PROJECT 664597
(D)	A. Mission Description Continued test. The Linked Interactive T&E N transmission of flight test data to van and integrate improved range teleme	A. Mission Description Continued test. The Linked Interactive T&E Networking (LITENING) project will provide the network infrastructure to sultransmission of flight test data to various facilities at Edwards for processing and analysis. The Advanced Range and integrate improved range telemetry systems to provide greater efficiencies in telemetry frequency utilization.	A. Mission Description Continued test. The Linked Interactive T&E Networking (LITENING) project will provide the network infrastructure to support inter-range simulations and support the efficient transmission of flight test data to various facilities at Edwards for processing and analysis. The Advanced Range Telemetry (ARTM) Integration project will procure and integrate improved range telemetry systems to provide greater efficiencies in telemetry frequency utilization.	mulations and support the efficient f) Integration project will procure
	SMC/TE located at Task Force project wil	SMC/TE located at Kirtland AFB, NM is responsible for test planning and implementation for all space a Task Force project will provide the capability to develop and test new satellites and ground control systems.	le for test planning and implementation for all space and ballistic missile systems. The Combined Space Test op and test new satellites and ground control systems.	ems. The Combined Space Test
9	FY 1999 (\$ in Thousands)	(इ)		
6 9	\$0 \$1.615	46 Test Wing, Air Armament Center CAIS Integration. Continued integration.	46 Test Wing, Air Armament Center CAIS Integration, procured production units, and continued procurement of support equipment.	quipment.
3	\$724	C4I Test Capabilities Upgrade. Continued the acquis	Continued the acquisition of workstations, network connections, and processing hardware/software.	ing hardware/software.
9	\$2,453	GWEF. Completed the expanded radar simulator and midwave IR simulator. Continued aircraft/munitions modeling and simulation.	d radar simulator and midwave IR simulator. Began development of the multispectral man-in-the-loop unitions modeling and simulation.	Itispectral man-in-the-loop
93	\$2,109	GPS Range Integration. Continued integration and continued integration and continued in 15/APG 62 XVI and an integral	GPS Range Integration. Continued integration and completed the acquisition of translator/processor system.	milotor
<u> </u>	\$1,071 \$1,712	FKIMES. Acquired a F-15/AFG 63-V I radar intertal ASTE Range Systems. Continued upgrades to TSPI	PKIMES. Acquired a F-13/AFG 63-V1 radar interface. Began acquisition of a data link for the Com/180 Simulator. ASTE Range Systems. Continued upgrades to TSPI systems, telemetry, microwave, communications, arenas, gun test, and photo-optics.	nulator. s, gun test, and photo-optics.
<u>3</u>	\$853	Mission Control/Data Analysis. Began procurement	Began procurement of data acquisition equipment and real-time TM equipment, and a 3-D terrain	ient, and a 3-D terrain
5	\$1.672	generation/visualization capability. Multispectral Missile Warning System Test Capabilit	generation/visualization capability. Multispectral Missile Warning System Test Capability. Began acquisition of a high off boresight angle flight motion simulator and	t motion simulator and
· -		countermeasure simulations.		:
98	\$2,395 \$1 197	Santa Rosa Island Reconstitution. Continued develop BC Operational Test and Training. Provided for the continual and training.	Santa Rosa Island Reconstitution. Continued development of three focus sites to provide open air Hardware-in-the-Loop (HITL) capability. F. Onerational Test and Training—Provided for the onerations and maintenance of range assets required by AFSOC to test and train aircrews at	in-the-Loop (HITL) capability. AFSOC to test and train aircrews at
9	· · · · · · · · · · · · · · · · · · ·	the Eglin location.		
5	\$400	GPS Y2K Receivers. Procured required GPS receivers to conduct Y2K testing	rs to conduct Y2K testing.	
<u> </u>	\$868	Allion Engineering Development Control AEDC DAPS. Completed installation of the J4 rocks	Arifold Engineering Development Center AEDC DAPS. Completed installation of the 14 rocket test cell DAPS. IOC of 11/12 test cell portion of DAPS.	Š
33	\$1,097	CMP. Continued purchase of CMP workstations. Continued installation of data accusi	CMP. Continued purchase of CMP workstations. Continued to implement the AEDC Reengineering Computer Base.	iter Base.
<u> </u>	000,19	The Copyright of the Co	system in the 16T wind tunnel and the pre-test check out system in the 16T/16S wind tunnels.	6S wind tunnels. Began design of
		prant control of stories.		
Ъ	Project 664597	Pag	Page 3 of 9 Pages	Exhibit R-2 (PE 0604759F)

	RDT&	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2000
90 -	BUDGET ACTIVITY 06 - Management and Support	PE NUMBER AND TITLE O604759F Major T&E Investment	PROJECT 664597
<u>(</u>	A. Mission Description Continued	tion Continued	
9	FY 1999 (\$ in Thousands) Continued	sands) Continued	
9	\$695	Improve Turbine Engine Structural Integrity. Began design and procurement of Non-Intrusive Stress Monitoring System (NSMS) hardware. Installed dynamic data acquisition and processing system.	itoring System (NSMS) hardware.
56	\$2,681 \$0	Hypersonic Capability Development. Continued study contracts for requirements definition and program planning. Air Force Flight Test Center	Janning.
(9)	\$3,514	CAIS I&S development. Continued rehost of TIMS to Windows NT platform (Instrumentation Loading, Integration, and Decommutation (ILIAD)) and improved TIMS with automated setup of systems, automated diagnostics, and simulation capability. Continued development of an	integration, and Decommutation ability. Continued development of an
		advanced solid state recorder.	1
9	\$5,595	ADAPS. Continued to integrate simulation system with real-time data analysis capability. Began development of desktop simulation capability.	ment of desktop simulation capability.
		Continued to provide the traditional structures & flutter post-test analysis capability in hear real-time in the Kidley Mission Control Kooms. Began installation of post test analysis capabilities for flight testing. Provided avionics data processing in near real-time in the Ridley Mission Control Rooms. Ensured Y2K compliance of all systems under development.	: Kidley Mission Control Kooms. near real-time in the Ridley Mission
9	\$1,127	Flight Simulation Modernization. Provided the reconfigurable cockpit prototype to validate the design for the reconfigurable cockpit upgrades to the TEMS facility.	the reconfigurable cockpit upgrades to
9	\$658	LITENING. Began the network design phase. Communication Equipment Rooms have been surveyed, network traffic is in the process of being analyzed and connectivity to the Defense Research Engineering Network (DREN) has been established.	twork traffic is in the process of being
9	\$0	Space & Missile Systems Center T&E Directorate	
9	\$752	Combined Space Test Task Force. Began procurement of hardware and software to complete evaluations of on-orbit R&D satellites and technologies. Began development of a satellite command and control database and models.	of on-orbit R&D satellites and
9	\$0	Other Projects	
<u> </u>	\$247 \$37,995	Joint Project Office for T&E support. Total	
9	FY 2000 (\$ in Thousands)	(spues	
9	80	46 Test Wing, Air Armament Center	
9	\$2,958	CAIS Integration. Continue integration, procure mini-CAIS hardware, and continue procurement of support equipment for CAD/CAM and preflight quick-look capability.	rt equipment for CAD/CAM and
<u>(</u>	\$1,538	C4I Test Capabilities Upgrade. Continue acquisition of workstations, network connections, and processing hardware/software. Begin upgrades	, hardware/software. Begin upgrades
9	\$3,787	GWEF. Continue acquisition of the multispectral man-in-the-loop. Begin acquistion of an active laser simulator and an Imaging IR Simualtion	ulator and an Imaging IR Simualtion
ā	Project 664597	Page 4 of 9 Pages	Exhibit R-2 (PE 0604759F)

	RDT	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2000
90 00	BUDGET ACTIVITY 06 - Management and Support	PENUMBER AND TITLE 0604759F Major T&E Investment	PROJECT 664597
3	A. Mission Description Continued		
9	FY 2000 (\$ in Thousands) Continued	sands) Continued	
<u>(C</u>	\$1,755	& Projection capability. Continue development of aircraft/munitions modeling and simulation. GPS Range Integration. Continue acquisition of Advanced Range Data System (ARDS) pods, S/W improvements, and ground vehicle	its, and ground vehicle
5	\$1,927	instrumentation. PRIMES. Begin development of aircraft/munitions interface simulations for F-15 and F-16. Continue advanced signature generator upgrades.	l signature generator upgrades.
9	\$2,698		ades to gun ranges, microwave,
(61 262		king Infrared (FLIR) system, and
9 (\$1,263	Mission Control/Data Analysis. Continue procurement of data acquisition equipment and 3-D terrain generation/visualization capability. Begin acquisition of H/W and S/W for 'near' real-time data processing.	/visualization capability. Begin
<u> </u>	\$1,648	Multispectral Missile Warning System Test Capability. Complete the high off boresight angle flight motion simulator (FMS) and countermeasures simulation.	ulator (FMS) and
<u>(</u>	\$1,398	Seeker T&E. Begin upgrades to the MMW measurement systems. Acquire a midwave focal plane array (FPA) imaging radiometer. Upgrade the Seeker Test Van tracking system	imaging radiometer. Upgrade the
(5)	\$4,431	Eglin Range Upgrades. Will support three on-going projects: 1. Santa Rosa Island Reconstitution will continue development of three focus	development of three focus
		sites to provide open air Hardware-in-the-Loop (HITL) capability. 2. Armament Systems Test Environment will improve several subsystems by integrating the latest technology to support the T&E of modern weapon systems. 3. C4I Upgrades will improve multifunctional reconfigurable C4I Test and Evaluation infrastructure.	I improve several subsystems by multifunctional reconfigurable
58	\$0	Amold Engineering Development Center	
9 (61,170	CML: Add increment five worksystems. Initiate the Aircraft Systems Test Operations Pilot effort. Integrate the Product Data Manager application software packages. Initiate the migration of real-property drawings and designs to a raster format.	e Product Data Manager
<u> </u>	\$6,761	PWT Upgrades. Complete installation of data acquisition and processing system in the 16T wind tunnel. Design the 16S wind tunnel data acquisition and processing system. Begin installation of 16S wind tunnel data acquisition and processing system. Regin installation of 16T/16S	the 16S wind tunnel data Regin installation of 16T/16S
5	\$523	wind tunnel plant control systems. Begin planning/design for electric motor repower upgrades. Begin planning for flow quality improvements. Improve Turbine Engine Structural Integrity. Develop Non-Intrusive Stress Monitoring System (NSMS) software to identify turbine engine rotor	for flow quality improvements. e to identify turbine engine rotor
55	\$1,000 \$3,938	blade characteristics. Install additional channels for the dynamic data acquisition and processing system. Laser Induced Surface Induction (LISI). Fund the development and test of University of Tennessee Space Institute LISI project Hypersonic Capability Development. Continue study contracts for requirements definition and program planning.	ite LISI project
P	Project 664597	Page 5 of 9 Pages	Exhibit R-2 (PE 0604759F)

	RDT	RDT&E BUDGET ITEM JUSTIFICATIO	STIFICATION SHEET (R-2 Exhibit)	DATE February 2000
90 00	вирсет астилту 06 - Management and Support	and Support	PE NUMBER AND TITLE 0604759F Major T&E Investment	PROJECT 664597
3	A. Mission Description Continued	ption Continued		
9	FX 2000 (\$ in Thousands) Continued	sands) Continued		
9	80	Air Force Flight Test Center		
9	\$3,651	CAIS I&S. Continue development and implementa airborne Solid State Recorder. Procure bandwidth	CAIS I&S. Continue development and implementation of an internet-based instrumentation management information system. Procure additional airborne Solid State Recorder. Procure bandwidth efficient telemetry transmitters and demodulators. IOC of ILIAD will be established. Begin	ormation system. Procure additional ILIAD will be established. Begin
		integration of commercial tools for instrumentation Complete rehost of TIMS to ILAD. Begin develop	integration of commercial tools for instrumentation support into ILIAD. Test prototype and procure a production Solid State Recorder. Complete rehost of TIMS to ILAD. Begin development of CAIS Bus to Next Generation (NextGen) Bus (Fibre Channel) bridge. Provide the	tion Solid State Recorder. ore Channel) bridge. Provide the
		capability to support new airborne instrumentation data rate decommutation and recording.	capability to support new airborne instrumentation capabilities including: on-board processing innovations, on-board smart sensors, and high data rate decommutation and recording.	n-board smart sensors, and high
3	\$2,807	ADAPS. Integrate real-time systems across the flig	ADAPS. Integrate real-time systems across the flight test center to replace older systems. Begin distribution of full capability for post test	of full capability for post test
1	;	analysis system. Evaluate and activate first prototy	analysis system. Evaluate and activate first prototypes of modeling and simulation integration of real-time operations.	erations.
9	\$3,367	Flight Simulation Modernization. Upgrade TEMS	Flight Simulation Modernization. Upgrade TEMS facility with first of four reconfigurable cockpits. This system will be a high fidelity cockpit with a high fidelity viewal existem. Threads the interfaces between the TEMS simulations to allow multi-facility viewal existem.	stem will be a high fidelity cockpit
9	\$2,151	LITENING. Connect the Avionics Test & Integrat	LITENING. Connect the Avionics Test & Integration Complex (ATIC), Ridley Mission Control Center and the Combined Test Forces together.	the Combined Test Forces together.
		Begin development on the ATM Network Operations Center.	ns Center.	
9	\$1,666	MASTER. Develop the repository for models and	MASTER. Develop the repository for models and data using established procedures to validate them with data collected during ground and	ta collected during ground and
		simulations for the AWMS cockpits. Existing mod	ingue test. The mouets and the data will be used to support man-in-ne-loop simulator testing and training, which will support configurable simulations for the AWMS cockpits. Existing models will be converted to Joint Modeling & Simulation System (J-MASS) real-time compatible	nich will support configurable em (J-MASS) real-time compatible
		models.		
<u> </u>	\$5,021	Heavylift Launch Platform. Upgrade B-52H aircra testing and operation. The upgrade will strengthen 25,000 to 70,000 pounds. Upgrade also includes in	Heavylift Launch Platform. Upgrade B-52H aircraft to perform heavy-lift launch platform duties for Re-usable Aerospace Vehicles (RAV) testing and operation. The upgrade will strengthen the B-52H wing structure and pylon mounts, increasing the external payload capacity from 25,000 to 70,000 pounds. Upgrade also includes installation of instrumention needed for monitoring key test parameters of the launch platform	ole Aerospace Vehicles (RAV) e external payload capacity from parameters of the launch platform
į	Ç	and test vehicle.		
33	\$0 \$950	Space & Missile Systems Center 1 & E Directorate Combined Space Test Task Force. Begin developing	Space & Missile Systems Center 1 & Directorate Combined Space Test Task Force. Begin development and acquisition of expert systems to support operations and festing of fixture technology	s and testing of future technology
,		for R&D satellites. Evaluate effectiveness of these	for R&D satellites. Evaluate effectiveness of these systems and their value to support warfighter needs.	
5	\$0	Other Projects		
39	\$225 \$56,659	Joint Project Office for 1&E support. Total		
۵	Project 664597	P	Page 6 of 9 Pages	Exhibit R-2 (PE 0604759F)

	RDT8	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	hibit) DATE February 2000
90	BUDGET ACTIVITY 06 - Management and Support	PE NUMBER AN 0604759F	Najor T&E Investment 664597
3	A. Mission Description Continued	tion Continued	
9	FY 2001 (\$ in Thousands)	spues	
99	\$0	46 Test Wing, Air Armament Center CATS Integration Complete integration and required compact equipment acquisition	ition
39	\$1,762	CAI Upgrade. Complete the acquisition of workstations, connectivity, HW/SW upgrades, and JTIDS OPFAC upgrades. Acquire test analysis	upgrades, and JTIDS OPFAC upgrades. Acquire test analysis
!	,	equipment and M&S tools.	
99	\$2,545 \$1,711	GWEF. Complete the multispectral man-in-the-loop and imaging IR developments. Continue aircraft/munition M&S efforts. GPS Range Integration. Complete acquisition of ARDS pods. S/W improvements, and ground vehicle instrumentation.	ents. Continue aircraft/munition M&S efforts. nts. and ground vehicle instrumentation.
3	\$1,692	PRIMES. Complete the aircraft/munitions interface simulations and the advanced signature generator upgrades. Acquire a synthetic aperture	ed signature generator upgrades. Acquire a synthetic aperture
		radar target simulator.	
9	\$1,856	ASTE Range Systems. Complete acquisition of instrumentation/equipment for infrastructure upgrades in such areas as TSPI, microwave, TM,	infrastructure upgrades in such areas as TSPI, microwave, TM,
Ę	400	a)	test.
€	\$1,402	Mission Control/Data Analysis. Complete procurement of data acquisition eq terrain generation/visualization capability.	Complete procurement of data acquisition equipment, near real-time data processing equipment, and a 3-D apability.
9	\$862	Seeker T&E. Complete upgrades to the MMW measurement system and acquire a high speed digital data recorder, a longwave and shortwave	e a high speed digital data recorder, a longwave and shortwave
		length FPA imaging radiometers. Upgrade the Airborne Seeker Evaluation Test System (ASETS) instrumentation.	t System (ASETS) instrumentation.
3	\$0	Arnold Engineering Development Center	
9	\$3,777	CMP. Procure/Install increment six worksystems. Complete Product Data Manager integration with application software packages. Upgrade	nager integration with application software packages. Upgrade
		older worksystems to the state-of-the-art PC hardware configuration. FOC of CMP systems.	MP systems.
9	\$20,133	PWT Upgrades. Complete installation of 16S wind tunnel data acquisition and processing system. Complete installation of plant control	processing system. Complete installation of plant control
Œ	988\$	systems in 161/165 wind unnels. Initiate procurements for electric motor upgrades. Begin design of flow quality improvements. Improve Turbine Fnotine Structural Integrity. Complete installation of the dynamic data acquisition and processing system and the NSMS.	ages. Begin design of flow quality improvements. mic data acquisition and processing eyetem and the NSMS
)	0	Begin planning/design of the Structural Dynamic Response Analysis Capability.	ine dam acquisinon and processing system and the restrict.
9	\$0	Air Force Flight Test Center	
9	\$2,662	CAIS I&S. Complete the development and integration of an internet-based in	pment and integration of an internet-based instrumentation management system. Continue development of
		CAIS Bus to NextGen Bus (Fibre Channel) Bridge. Provide data compression and on-board processing operational capability developed under	and on-board processing operational capability developed under
9	\$2,601	ADAPS. Complete integration of the post test analysis capability at the Combined Test Force level. Complete post test analysis development.	ned Test Force level. Complete post test analysis development.
· _		Complete the installation of common data systems throughout the Flight Test Center. Upgrade control room workstations. Complete integration of modeling and simulation with real-time operations.	enter. Upgrade control room workstations. Complete integration
ıΤ	Project 664597	Page 7 of 9 Pages	Exhibit R-2 (PE 0604759F)
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	RDT&	RDT&E BUDGET ITEM JUSTIFICATION	STIFICATION SHEET (R-2 Exhibit)		DATE February 2000	
90E	BUDGET ACTIVITY 06 - Management and Support	d Support	PE NUMBER AND TITLE 0604759F Major T&E Investment	nvestment	PROJECT 664597	јест 1 597
9	A. Mission Description Continued	on Continued		-		
9	FY 2001 (\$ in Thousands) Continued	nds) Continued				
5	\$3,887	Flight Simulation Modernization. Upgrade TEMS Facility with the second of four reconfigurable cockpits.	acility with the second of four reco	infigurable cockpits		
9	\$2,322	LILENING. Extend the ATM backbone network to critical Range Support buildings and CTFs. Develop the Network Operations Center to monitor and manage network traffic loads. Expand secure network links to allow classified test data to be transferred between integrated secret, compartmentalized facilities.	critical Kange Support buildings an secure network links to allow classi	d CIFs. Develop tiffed test data to be	he Network Operations Center to transferred between integrated se	to secret,
9	\$1,000	MASTER. Convert and validate flying qualities and avionics models acquired from System Program Offices into J-MASS compatible models. Amold AFR will begin to convert promission weapons, and airframe interaction models.	lavionics models acquired from Sy	stem Program Offic s	ces into J-MASS compatible mod	odels.
9	\$768	Advanced Range Telemetry (ARTM) Integration. Begin integration of RCC FQPSK modulation/demodulation technology into telemetry	egin integration of RCC FQPSK m	odulation/demodula	ation technology into telemetry	•
		transmitters/receivers. Begin integration of PCM data compression and forward error correction technology into the range infrastructure, improvement and modernization of telemetry ground stations.	ita compression and forward error c I stations.	orrection technolog	y into the range infrastructure. I	Begin
5		Space & Missile Systems Center T&E Directorate				
9	\$942	Combined Space Test Task Force. Continue development and evaluation of expert systems to support operations and testing of future fechnology R&D estellites. Implement lessons learned and transition technical advancements to operational users.	pment and evaluation of expert syst	tems to support operations	rations and testing of future	
<u>e</u>	0\$	Other Projects				
99	\$335 \$54,057	Joint Project Office for T&E support. Total				,
<u> </u>	B. Budget Activity Justification This Program Element is in Budg of T&E capabilities at Air Force 7	B. Budget Activity Justification This Program Element is in Budget Activity 6, Management and Support, because it is a Research and Development (R&D) effort for Improvement and Modernization of T&E capabilities at Air Force Test Centers.	secause it is a Research and Develo	pment (R&D) effor	t for Improvement and Moderniz	ization
9	C. Program Change	C. Program Change Summary (\$ in Thousands)				
į	:		FY 1999	FY 2000		Total Cost
9	Previous President's Budget (FY 2000 PBR)	udget (FY 2000 PBR)	40,416	47,334	56,238	·
<u> </u>	Appropriated Value Adjustments to Appropriated Value	priated Value	41,068	57,934		
	a. Congressional/General Reductions	ral Reductions	-652	-39		
	b. Small Business Innovative Research	vative Research	-805	į		
	c. Omnibus or Other Above 1 hr d. Below Threshold Reprogram	c. Omnibus or Other Above 1 hreshold Keprogram d. Below Threshold Reprogram	-1,403	0/8-		
	Project 664597	Pa	Page 8 of 9 Pages		Exhibit R-2 (PE 0604759F)	759F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhi	bit)		DATE February 2000	2000
90 90	BUDGET ACTIVITY 06 - Management and Support	PE NUMBER AND TITLE 0604759F Major	AND TITLE Major T8	PE NUMBER AND TITLE 0604759F Major T&E Investment	nent		PROJECT 664597
(£)	C. Program Change Summary (\$ in Thousands) Continued		FV 1999	FY 2000		FY 2001	Total Cost
	e. Rescissions		-213	-366		***************************************	ino i
99	 Other Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR 		37,995	56,659		-2,181 54,057	TBD
5	Significant Program Changes: Congressional action, FY00 plus up of 13,600: Eglin Range Upgrade (4,500), Hypersonic Capability Development (4,000), Heavy Launch Platform (5,100).	0), Hypersonic (Sapability Dev	velopment (4,0)00), Heavy I	Launch Platform (5,10	30).
E	D. Other Program Funding Summary (\$ in Thousands)	EV 2002	EV 2002	5000 XE	EV 2005	4	C Tro
	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	10tal Cost
99	AF RDT&E Other APPN Related RDT&E: PE 0604256F, Threat Simulater Development and PE 0604940D, Central Test and Evaluation Investment Program)4940D, Central	Test and Eval	luation Investr	nent Program		
9	E. Acquisition Strategy This program element uses several different contracting strategies to provide the most cost effect full and open competition wherever possible to improve and modernize existing test capabilities.	the most cost ering test capabili	ffective T&E	investment sol	lutions. The	strategies to provide the most cost effective T&E investment solutions. The main acquisition strategy is to use and modernize existing test capabilities.	egy is to use
9	F. Schedule Profile	200		ļ		ì	
1		2 3	4	1 2 3	3 4	$\begin{array}{ccc} & \text{FY 2001} \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & \\ & & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & \\ & & \\ & \\ & & \\ & $	3 4
<u> </u>	This PE contains multiple schedule profiles which are available upon request.	نب					
C	Project 664597	Page 9 of 9 Pages				Exhibit R-2 (PE 0604759F)	0604759F)

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RDT&E BUDGET ITEM JU	JSTIFIC	ATION	ISTIFICATION SHEET (R-2 Exhibit)	(R-2 Ex	hibit)		DATE	Februa	February 2000
BUDGET ACTIVITY 06 - Management and Support			PE NUMBER 0605101	PE NUMBER AND TITLE 0605101F RAND	Project	PE NUMBER AND TITLE 0605101F RAND Project Air Force			РВОЈЕСТ 661110
COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
661110 Project Air Force	23,485	19,864	24,080	20,354	20,769	21,198	21,537	21,537 Continuing	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

(U) A. Mission Description

This program provides for continuing analytical research across a broad spectrum of aerospace issues and concerns. The Project AIR FORCE (PAF) research agenda is focused primarily on mid- to long-term problems; in addition, PAF provides quick response assistance for senior Air Force officials on high priority, near term issues. Results and analytical findings directly impact senior management deliberations on major issues. The Air Force Steering Group, chaired by the Vice Chief of Staff, reviews, monitors, and approves PAF annual research efforts. Each project is initiated, processed, and approved IAW PAF Sponsoring Agreement which requires General Officer (or SES equivalent) sponsorship and involvement on a continuing basis.

- applicable program. Research programs address organizational cross-cutting issues as defined by specific research themes approved by the Air Force Steering Group. (U) PAF is organized in four primary research program areas: strategy and doctrine; aerospace force development; manpower, personnel and training: and resource management and system acquisition. Integrative research projects are also conducted at the division level with direct support assistance provided through the most These research themes encompass a wide spectrum of topics including external challenges to national security, integrating the ISR Mix, implementation of the Air Expeditionary Force, tailoring and reducing infrastructure and improved weapon system costing.
- improved weapon system cost analysis, and improved ways of measuring and forecasting Air Force readiness, managing the aging aircraft fleet, shaping the future total aerospace power in urban conflict, implications of unmanned air vehicles for the future shape of the Air Force, enhancing the effectiveness of air expeditionary forces, exploiting commercial communication systems, implementation of lean logistics and agile combat support, improved Air Force contracting for support services, (U) In FY 99, principal research efforts included studies on Chinese defense modernization and the USAF, NATO's role in ensuring energy security, the role of force, and creating a human resource system to support the expeditionary aerospace force.
- FY99. Work has been defined in support of research themes which focus on major external challenges and opportunities affecting USAF operations; institutionalization force modernization initiatives, and enduring management and resource areas of concern to USAF leadership. The research agenda for FY00 extends work initiated in force mix and infrastructure. Of particular note in FY00 will be the continuation of an assessment of Kosovo lessons learned, covering a broad spectrum of planning, (U) During FY00, research undertaken by Project AIR FORCE (PAF) will be driven by specific focus areas developed through the USAF strategic planning process, of the USAF vision and strategic plan, implementation of the Air Expeditionary Force concept; integration of air and space operations; power projection forces; and,

Project 661110

Page 1 of 4 Pages

Exhibit R-2 (PE 0605101F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE	February 2000
- 90	BUDGET ACTIVITY 06 - Management and Support	PE NUMBER AND TITLE 0605101F RAND Project Air Force	PROJECT 661110
<u>6</u>	A. Mission Description Continued operations of these findings to future Air Force plans and operations.	are Air Force plans and operations.	
	(U) For FY01, the current research themes which guide the PAF research agenda will be adjusted as necessary, primarily to reflect the major questions that will be addressed during QDR 2001. Questions of interest will likely be incorporation of Kosovo lessons learned, maturation of the AEF concept of operations, continued use of commercial sources and methods, effective use of Air Force resources and long term modernization of the aerospace force.	enda will be adjusted as necessary, primarily to reflect the major on of Kosovo lessons learned, maturation of the AEF concept of of long term modernization of the aerospace force.	questions that will be perations, continued use
	(U) PAF research spans functional and organizational boundaries and is managed in a manner to facilitate independence and freedom from organizational bias thereby providing perspectives and insights to senior Air Force leaders free from parochial spins not necessarily in the best interest of the Air Force at large.	ooundaries and is managed in a manner to facilitate independence and freedom from organiz. leaders free from parochial spins not necessarily in the best interest of the Air Force at large.	ganizational bias thereby large.
	(U) Benefits of independent non-Department of Defense analysis of complex present day and emerging issues are shared beyond the immediacy of the Air Force. PAF study results are given wide dissemination within the DOD on a routine basis and deposited with the Defense Technical Information Center available to a broad range of qualified government and commercial individuals and activities.	se analysis of complex present day and emerging issues are shared beyond the immediacy of the Air Force. PAF OD on a routine basis and deposited with the Defense Technical Information Center available to a broad range of ctivities.	acy of the Air Force. PAF railable to a broad range of
333333	FY 1999 (\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\		
299999	\$3,500 Strategy and Doctrine \$6,250 Aerospace Force Development \$2,400 *Manpower, Personnel and Training \$6,400 Resource Management and Systems Acquisition \$1,314 Integrative Research / Direct Support \$19,864 Total * No split in FY99, program new in FY00		
۵	Project 661110	Page 2 of 4 Pages Exhit	Exhibit R-2 (PE 0605101F)

	RDT&E BUDGET ITEM JUSTIFICATION	STIFICATION SHEET (R-2 Exhibit)	t)	DATE February 2000	2000
90 GNB	BUDGET ACTIVITY 06 - Management and Support	PE NUMBER AND TITLE 0605101F RAND Project Air Force	ect Air Force		PROJECT 661110
(<u>n</u>)	A. Mission Description Continued				
5555555	FY 2001 (\$\frac{\$}\$ in Thousands) \$4,420 Strategy and Doctrine \$6,965 Aerospace Force Development \$2,966 Manpower, Personnel and Training \$7,644 Resource Management and Systems Acquisition \$2,085 Integrative Research / Direct Support \$24,080 Total				
9	B. Budget Activity Justification This program is in budget activity 6 - Management and Support, because it funds RAND Project AIR FORCE (PAF), the only Air Force Federally Funded Research and Development Center for studies and analyses.	nds RAND Project AIR FORCI	E (PAF), the only	Air Force Federally Funde	ed Research
3	C. Program Change Summary (\$ in Thousands)	FY 1999	FY 2000	FY 2001	Total Cost
565	Previous President's Budget (FY 2000 PBR) Appropriated Value Adjustments to Appropriated Value	19,991	20,560 20,560	20,294	
	 a. Congressional/General Reductions b. Small Business Innovative Research c. Omnibus or Other Above Threshold Reprogram d. Below Threshold Reprogram 	-1,1 <i>77</i> -675 4,300	-262		
55	e. Rescissions f. Other Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR	-j31 23,485	-130	3,786	
(2)	Significant Program Changes: N/A				
	Project 661110	Page 3 of 4 Pages		Exhibit R-2 (PE 0605101F)	0605101F)

	RDT&E BUDGET ITEM JU		STIFICATION SHEET (R-2 Exhibit)	I SHEET	(R-2 Exh	ibit)	DA	DATE February 2000	™ 2000
90 90	вирсет астіvіту 06 - Management and Support			PE NUMBER AND TITLE 0605101F RANK	AND TITLE F RAND P	PE NUMBER AND TITLE 0605101F RAND Project Air Force	Force		PROJECT 661110
(G)	D. Other Program Funding Summary (\$ in Thousands) EY 1999 EY 2000 Actual Estimate	\$ in Thousands) 99	EY 2001 Estimate	FY 2002 Estimate	FY 2003 Fstimate	EY 2004 Estimate	FY 2005 Fetimate	Cost to	Total Cost
9	Not Applicable								
9	E. Acquisition Strategy The RAND Project Air Force contract is a 5 year (base + 4 option yrs) Cost Plus / Award Fee contract	5 year (base + 4 op	otion yrs) Cost	Plus / Award F	ee contract				
3	F. Schedule Profile								
			П	EY 1999 2 3	4	1 2 2	FY 2000 2 3 4	1 EX	EY 2001 2 3 4
9	Approve FY99 Research Plan		*						
<u> </u>	Adjust FY99 Research Plan			*	,				
99	Program-Wide Evaluation - FY99 Draft EV00/01 Research Plan				* *				
) E	Annrove FV00/01 Research Plan					*			
9	Annual Evaluation FY00						×		
3	Draft FY01 Research Plan						×		
9	Approve FY01 Research Plan						×		
5	Adjust FY01 Research Plan							×	
۵	Project 661110		Pag	Page 4 of 4 Pages				Exhibit R-2 (I	Exhibit R-2 (PE 0605101F)

	RDT&E BU	RDT&E BUDGET ITEM JU		ATION	STIFICATION SHEET (R-2 Exhibit)	(R-2 Ex	rhibit)		DATE	February 2000	ry 2000
BUDG	BUDGET ACTIVITY	1			PE NUMBER	_	7 10 11			1	PROJECT
3	COST (\$ in Thousands)	John I.	FY 1999	FY 2000	FY 2001 F	_	FY 2003	FY 2004	72002 FY 2003 FY 2004 FY 2005 Cos	Cost to	Total Cost
			Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
662767	7 Ranch Hand II Epidemiology Study	Study	4,122	4,408	4,356	11,318	10,892	4,825	4,943	Continuing	TBD
	Quantity of RDT&E Articles		0	0	0	0	0	0	0	0	0
Ð	A. Mission Description This program was directed in 1980 by the Assistant to the President of the United States for Domestic Affairs and Policy upon the recommendation of the Interagency Working Group on the Possible Long-Term Effects of Phenoxy Herbicides and Contaminants. As a result of this Presidential direction, PE 0605306F was established to	1980 by the Assistant to	the Preside	nt of the Ur	nited States fo	or Domestic	Affairs and esult of this	Policy upor Presidential	the recomn	nendation of E 0605306F	the President of the United States for Domestic Affairs and Policy upon the recommendation of the Interagency Phenoxy Herbicides and Contaminants. As a result of this Presidential direction, PE 0605306F was established to
	conduct a 20-year epidemiology investigation of approximately 1,200 Air Force personnel who were involved with aerial spraying of herbicides in Vietnam from 1962 to 1971 (Operation Ranch Hand). The objective of this investigation is to determine whether long-term health effects exist and can be attributed to occupational exposure to phenoxy herbicides and their associated dioxins. Dioxins are an unwanted by-product from numerous current manufacturing processes and a major health	gy investigation of appr nd). The objective of th es and their associated o	oximately 1 is investigat lioxins. Dio	200 Air Fortion is to det xins are an	rce personne termine whet unwanted by	I who were i ther long-ten -product fro	involved wit m health effi m numerous	h aerial spra ects exist an s current ma	ying of herb d can be attr nufacturing	oicides in Vie ibuted to occ processes and	tnam from 1962 upational d a major health
	concern of the EFA and other government agencies.	government agencies.									
	This project involves a 20-year study, which was initiated in 1982, that compares United States Air Force (USAF) Ranch Hand personnel to a control group of USAF crew members and support personnel who were not exposed to herbicides while serving in Vietnam. Approximately 20,000 individuals (exposed personnel group plus	ar study, which was initi	ated in 1982 xposed to he	, that comprbicides wh	ares United Sile serving in	States Air Fo	orce (USAF) Approximat	Ranch Han ely 20,000 ii	d personnel	to a control g	group of USAF
	control group) are participating in the annual mortality study, with approximately 2,200 (exposed personnel group plus control group) of these participating in the detailed morbidity study during each physical examination cycle. The detailed physical examination cycle includes follow-up health examinations at the 3-, 5-, 10-, 15-, and 20-year time periods. The study includes examination of the possible occurrence of birth defects in children as determined from children's medical records and	ng in the annual mortality is each physical examin e study includes examin	y study, with ation cycle.	approxima The detaile possible occ	ately 2,200 (e	exposed pers xamination irth defects	sonnel group cycle include in children a	plus contro es follow-up is determine	l group) of t health exan d from child	hese participa ninations at the Iren's medica	ating in the he 3-, 5-, 10-, 15-, I records and
	family medical histories. The Congressionally-established Ranch Hand Advisory Committee has directed that all study findings be reported to the scientific community as peer-reviewed journal articles.	: Congressionally-establics.	ished Ranch	Hand Advi	sory Commi	ttee has dire	cted that all	study findin	igs be report	ed to the scie	ntific community
5	9 (\$ in Thousar	•	•	•	•		•				
<u>3</u>	\$1,390 Comple \$229 Analyz	Completed examination data base and conducted statistical analyses of examination data. Analyzed laboratory specimens to include serum dioxin assays and completion of fat biopsy analyses as well as conducted statistical research	ase and cond s to include	lucted statis serum dioxi	se and conducted statistical analyses of examination data. to include serum dioxin assays and completion of fat bior	s of examine completion	ation data. of fat biops:	y analyses a	s well as cor	nducted statis	tical research
9	\$2,503 Process annual	studies to include completion of a mathematical model to integrate mortality and morbidity data for analysis. Processed and documented examination data to include updating of the participant database; conducted medical records coding; performed the annual mortality analysis of approximately 1,200 Ranch Hand personnel and 19,000 comparison personnel; and conducted data analysis for	or a matnemis mination da proximately	incal model ta to include 1,200 Ranc	to integrate e updating of th Hand pers	mortainty an f the particip onnel and 19	nd morbidity vant database 9,000 compa	data ror ana;; conducted rison persor	nysis. medical rec mel; and cor	ords coding; nducted data	performed the analysis for
5	articles (U) \$4,122 Total	articles to be submitted to peer-reviewed journals as directed Total	-reviewed jo	urnals as di	rected.						
P	Project 662767			Page	Page 1 of 3 Pages	100			ш	Exhibit R-2 (Exhibit R-2 (PE 0605306F)

	RDT8	RDT&E BUDGET ITEM JUSTIFICATION S	STIFICATION SHEET (R-2 Exhibit)	February 2000
90 -	вирдет астилту 06 - Management and Support		PENUMBER AND TITLE 0605306F Ranch Hand II Epidemiology Study	PROJECT 662767
ອ	A. Mission Description Continued	on Continued		
9	FY 2000 (\$ in Thousands)	(spur		
(5)	\$1,120	Complete statistical analysis of examination data. Docur as directed by the Congressionally-established Ranch Ha findings.	Complete statistical analysis of examination data. Document all analyses and findings in 4,000 page, fifth cycle final report. Conduct analyses as directed by the Congressionally-established Ranch Hand Advisory Committee. Analyses are based on current morbidity data trends and findings.	il report. Conduct analyses orbidity data trends and
5)	\$386	Conduct other agency/university studies supporting scien of dioxin than found in Agent Orange; conduct morbidity analyses.	Conduct other agency/university studies supporting scientific effort; start Center for Disease Control study to test for the presence of other forms of dioxin than found in Agent Orange; conduct morbidity and mortality mathematical modeling; conduct dioxin half-life and serum dioxin analyses.	r the presence of other forms Flife and serum dioxin
9	\$2,902	Process and document examination data to include updat mortality analysis of approximately 1,200 Ranch Hand p submitted to peer-reviewed journals as directed.	Process and document examination data to include updating of the participant database; conduct medical records coding; perform the annual mortality analysis of approximately 1,200 Ranch Hand personnel and 19,000 comparison personnel; and conduct data analysis for articles to be submitted to peer-reviewed journals as directed.	ding; perform the annual ta analysis for articles to be
9	\$4,408	Total		
5	FY 2001 (\$ in Thousands)		Can contract continued to the contract of the	one or correct monthidity
€	\$1,105	Conduct analyses as directed by the Congressionally-ests data trends and findings. Conduct process review prior in-house or regional examination sites and statistical, sch	Conduct analyses as directed by the Congressionally-estabilished Kalich Hally Advisory Committee. Analyses are based on Calich motorary data trends and findings. Conduct process review prior to final examination cycle to determine potential participation rates, requirements for in-house or regional examination sites and statistical, schedule, and cost implications of the aging study population.	ascu on canten moronary on rates, requirements for
5	\$567	Conduct other agency/university studies supporting scier forms of dioxin than found in Agent Orange; complete manalyses; start semen DNA study.	Conduct other agency/university studies supporting scientific effort; complete Center for Disease Control study to test for the presence of other forms of dioxin than found in Agent Orange; complete morbidity and mathematical modeling; complete dioxin half-life and serum dioxin analyses; start semen DNA study.	est for the presence of other life and serum dioxin
9	\$2,684	Process and document examination data to include updat mortality analysis of approximately 1,200 Ranch Hand p submitted to peer-reviewed journals as directed.	Process and document examination data to include updating of the participant database; conduct medical records coding; perform the annual mortality analysis of approximately 1,200 Ranch Hand personnel and 19,000 comparison personnel; and conduct data analysis for articles to be submitted to peer-reviewed journals as directed.	ding; perform the annual ita analysis for articles to be
(3)	\$4,356	Total		
5	B. Budget Activity Justification This program is in Budget Activit operations required for general re	B. Budget Activity Justification This program is in Budget Activity 6, Management and Support, since it includ operations required for general research and development use.	B. Budget Activity Justification This program is in Budget Activity 6, Management and Support, since it includes research and development efforts directed towards support of installations or operations required for general research and development use.	ort of installations or
Д	Project 662767	Page 2	Page 2 of 3 Pages	Exhibit R-2 (PE 0605306F)
			0.44	

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FICATION	SHEET (R-2 Exhi	bit)	/Q	DATE February 2000	y 2000
BUDG 96	BUDGET ACTIVITY 06 - Management and Support		PE NUMBER AND TITLE 0605306F Ranc	AND TITLE RANCH H	⊌ोगा∟ Ranch Hand II Epidemiology Study	demiology	Study	PROJECT 662767
Ð	C. Program Change Summary (\$ in Thousands)			FY 1999	FY 2000		FY 2001	Total Cost
(3)	Previous President's Budget (FY 2000 PBR)			4,273	4,510		4,554	TBD
<u> </u>	Appropriated Value Adjustments to Appropriated Value			4,408	4,510			
	a. Congressional/General Reductions			-135	-10			
	 b. Small Business Innovative Research c. Omnibus or Other Above Threshold Reprogram 			0/-	-63			
	d. Below Threshold Reprogram e. Rescissions			-50 -23	-29			
99	f. Other Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR			4,122	4,408		-198 4,356	TBD
<u>(5)</u>	<u>Significant Program Changes;</u> Not Applicable.							
<u>(c)</u>	D. Other Program Funding Summary (\$ in Thousands) EY 1999 EY 2000 Actual Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
<u>(a)</u>	Not Applicable.							
9	E. Acquisition Strategy Not Applicable.							
9	F. Schedule Profile	•	X 199		EX.		EX	
<u>(</u>	(U) Not Applicable.	-	2	4	7	ی 4	7	ى 4
Ф	Project 662767	Pag	Page 3 of 3 Pages		;		Exhibit R-2 (F	Exhibit R-2 (PE 0605306F)

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RDT&E BUDGET ITEM JU	M JUSTIFIC	ATION	STIFICATION SHEET (R-2 Exhibit)	(R-2 Ex	(hibit)		DATE	February 2000	y 2000
BUDGET ACTIVITY 06 - Management and Support			PE NUMBER 0605712	PE NUMBER AND TITLE 0605712F Initial	Operation	PE NUMBER AND TITLE OPERATIONAL TEST & EVALUATION	& Evalu	ation	PROJECT 660191
COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
660191 Initial Operational Test & Eval	29,171	26,510	28,238	29,464	29,764	30,359	30,960	30,960 Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

(U) A. Mission Description

decisions beyond low-rate initial production (LRIP), Milestone III, fielding, and declaration of initial operational capability (IOC). For major systems designated for Operational Test and Evaluation (FOT&E) when it is the continuation of IOT&E activities past the Milestone III decision. FOT&E answers specific questions about several system categories: Air; Space; Weapons; Command, Control, Communications, Computers, and Intelligence (C41); Combat Support; and Test Support. Air development (R&D) efforts. It is an evaluation of a system's performance when the complete system is tested and evaluated against operational criteria by personnel independent IOT&E which support major milestones and decision points prior to Milestone III, fielding, or declaration of IOC. IOT&E programs are identified in unresolved Critical Operational Issues (COIs) and test issues, or completes areas not finished during the IOT&E. This PE also funds related operational test and use in combat, the law requires IOT&E be completed under realistic field conditions before proceeding beyond low rate initial production. This PE funds the OT development, major modifications and other systems as directed. This PE funds Congressionally mandated IOT&E to support major weapon system acquisition participation in Combined Developmental Test (DT)/OT, the Air Force participation in Multiservice Operational Test and Evaluation (MOT&E), and Follow-on evaluation (OT&E) activities such as, Operational Utility Evaluations (OUE), Early Operational Assessments (EOA) and Operational Assessments (OA), and Force Operational Test and Evaluation Center (AFOTEC) obtains general support services from contracts awarded after employing full and open competition with the same qualifications as those who will operate, maintain and support the system when deployed. In general, IOT&E is performed on new systems in Initial Operational Test and Evaluation (IOT&E) is conducted to determine the operational effectiveness and suitability of systems undergoing research and contracting strategies.

(U) FY 1999 (\$ in Thousands) (U) \$13,482 (U)

- Program (CMUP) BLK E; B-1B CMUP BLK F; CV-22; F-15 Tactical Electronic Warfare System (TEWS); F-22; Joint Helmet Mounted Cueing activities, to include the following: Airborne Laser (ABL); Common Missile Warning System (CMWS); B-1B Conventional Mission Upgrade (U) CATEGORY: AIR SYSTEMS (renamed category Aircraft/Support to read Air Systems). Planned, executed, and reported IOT&E System (JHMCS); Joint Strike Fighter (JSF); and other systems.
 - ABL: Advance planning for EOA2 and IOT&E.
- CMWS: Planned and executed OA; advance planning for combined DT/OT and IOT&E.
- B-1B CMUP Block E: Planned and executed OA and combined DT/OT. Detailed Planning for IOT&E.
- · B-1B CMUP Block F: Planned and executed OA; plan for combined DT/OT. Advance planning for IOT&E.

Project 660191

Exhibit R-2 (PE 0605712F)

Page 1 of 10 Pages

	RDT8	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2000
90 00	вирсет астіліту 06 - Management and Support		PROJECT 660191
9	A. Mission Description Continued		= = = = = = = = = = = = = = = = = = =
9	FY 1999 (\$ in Thousands) Continued	ands) Continued	
		 CV-22: Advance planning for MV-22 IOT&E involvement. F-15 TEWS: Executed IOT&E and wrote report. F22: Executed OA. Advance planning for combined DT/OT and IOT&E. JHMCS: Executed IOT&E (was identified in the General category in the Feb 1999 R-2 Exhibit). JSF: Executed EOA. Advance planning for combined DT/OT. 	
9	0\$		
<u> </u>	\$2,078	(U) CATEGORY: SPACE SYSTEMS (renamed category Space to read Space Systems). Planned, executed, and reported IOT&E activities, to include the following: MILSTAR II; National Polar-Orbit Ops Environment Satellite System (NPOESS); Space Based InfraRed System (SBIRS); and other systems - MILSTAR II: Planned and executed combined DT/OT. Advance planning for MOT&E. - NPOESS: Early involvement; advance planning for OA. - SBIRS: Detailed planning and execution of combined DT/OT and IOT&E (SBIRS High and SBIRS LEO have been combined under SIBRS).	and reported IOT&E activities, to ce Based InfraRed System ve been combined under SIBRS).
98	\$0 \$6 279	(I) CATEGORY: WEAPONS (renamed category Missile/Munitions to read Weanons). Planned executed and renorted IOT&F activities to	nd renorted TOT&E activities to
		include the following: AIM-9X Air to-Air Missile; Hard Target Smart Fuse (HTSF); ICBM Upgrades (Guidance Replacement Program (GRP), Propulsion Replacement Program (PRP)); Joint Air-to-Surface Standoff Missile (JASSM); Joint Direct Attack Munition (JDAM); Joint Standoff Weapon (JSOW); Wind Corrected Munitions Dispenser (WCMD); and other systems. - AIM-9X: Executed OA and wrote report. Participate in DT. Advance planning for IOT&E. - HTSF: Advance planning for combined DT/OT (was identified in the General category in the Feb 1999 R-2 Exhibit). - JASSM: Advance planning for OA and combined DT/OT. - JDAM: Executed IOT&E and wrote final report. - JSOW: Executed combined DT/OT. Detailed planning for MOT&E. - WCMD: Detailed planning for combined DT/OT. Advance planning for IOT&E.	ce Replacement Program (GRP), Munition (JDAM); Joint Standoff Exhibit).
99	(U) \$1,379 (U) \$1,379	(U) CATEGORY: COMMAND, CONTROL, COMMUNICATIONS, COMPUTERS, INTELLIGENCE (C4I). Planned, executed, and reported IOT&E activities, to include the following: Deliberate Crisis Action Planning and Execution System (DCAPES); Distributed Common Ground System (DCGS); Defense IEMATS (DIRECT); Global Transportation Network (GTN); Integrated Broadcast System (IBS);	Planned, executed, and (DCAPES); Distributed Common adcast System (IBS);
<u>с</u>	Project 660191	Page 2 of 10 Pages	Exhibit R-2 (PE 0605712F)

	RDT	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2000	
90 -	вирсет астилту 06 - Management and Support	PE NUMBER AND TITLE 0605712F Initial Operational Test & Evaluation	PROJECT PROJECT 660191	ЕСТ 191
9	A. Mission Description Continued	tion Continued		
9.9	Region/Sector Evacuation Sy, DCAPES: A DCAPES: A DCAS: Exec DIRECT: Ex- GTN: Execu- IBS: Advanc - R/SAOC: Ex- TBM-CS: Ey TRAC2ES: I Survivor Evada Joint Ammunit System Tester and other syste - CSEL: Adva - DPGDS: Exe JAMSS: Exe JAMSS: Exe JAMSS: Exe JSCST: Adva - JSCST: Execut - TWR: Execut	Region/Sector Air Operation Center (R/SAOC); Theater Battle Management - Core Systems (TBM-CS); TRANSCOM Regulating and C2 Evacuation System (TRAC/2ES); and other systems. - DCAPES. Advance planning for combined DT/OT and OUE DCGS: Executed combined DT/OT Advance planning for IOT&E DIRECT: Executed Combined DT/OT and operational field tests (OFT) on incremental software releases GTN: Executed combined DT/OT. Detailed planning for IOT&E TBA. Advance planning for OUE RSAOC: Executed combined DT/OT. Detailed planning for IOT&E TBA.CS: Executed combined DT/OT. Advance planning for IOT&E TRACEES: Executed combined DT/OT. Advance planning for IOT&E DPGDS: Executed combined DT/OT. Advance planning for IOT&E JAMSS: Executed incremental combined DT/OT and JOT&E JAMSS: Executed incremental combined DT/OT and JOT&E JAMSS: Executed incremental combined bT/OT. Advance planning for IOT&E JAMSS: Executed incremental combined bT/OT. Advance planning for JOT&E JAMSS: Executed incremental combined bT/OT. Advance planning for JOT&E JAMSS: Executed incremental combined bT/OT. CATEMED PLANSE SECUTED PLANSE SECUTED COMBINED BT/OT. Advance planning for JOT&E JAMSS: Executed incremental combined bT/OT. CATEMED PLANSE SECUTED BT/OT. Advance planning for JOT&E JAMSS: Executed incremental combined bT/OT. CATEM	RANSCOM Regulating and C2 es, to include the following: C ed Logistics System - Supply (JCALS); Joint Service Elec CA); Tactical Weather Radar (TVA);	ombat LLS-S); ombat VR);
(U) \$4 (U) \$4	\$0 \$4,786	(U) CATEGORY: TEST SUPPORT (renamed category General to read Test Support). Provide test capabilities infrastructure to support OT Test Capabilities Infrastructure: Advance planning for software evaluation tool development, non-MRTFB instrumentation, and missile	lities infrastructure to support (3 instrumentation, and missile	OT.
P	Project 660191	Page 3 of 10 Pages	Exhibit R-2 (PE 0605712F)	12F)

	RDT	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	HEET (R-2 Exhibit) DATE February 2000	2000
90 90	BUDGET ACTIVITY 06 - Management and Support		PE NUMBER AND TITLE 0605712F Initial Operational Test & Evaluation	РРОЈЕСТ 660191
9	A. Mission Description Continued	vtion Continued		
5	FY 1999 (\$ in Thousands) Continued warning sensor - Y2K: Assist	r stimulator. ed MAJCOM to	plan and conduct of Y2K testing and consequence management.	
9	\$29,171			
99	FY 2000 (\$ in Thousands) \$15,029 Rac	CATEGORY: AIR SYST lar Upgrade (APG-63); Adv	 ids) (U) CATEGORY: AIR SYSTEMS. Plan, execute, and report IOT&E activities, to include the following: Airborne Laser (ABL); F-15 APG-63 Radar Upgrade (APG-63); Advanced Strategic & Tactical IR Expendable (ASTE); Common Missile Warning System (CMWS); B-1B 	.); F-15 APG-63 3-1B
		Conventional Mission Upgrade Program (CMUP) BLK E; B-1B CMI Joint Helmet Mounted Cueing System (JHMCS); Joint Strike Fighter - ABL: Advance planning for EOA2, combined DT/OT, and IOT&E.	Conventional Mission Upgrade Program (CMUP) BLK E; B-1B CMUP BLK F; CV-22; F-15 Fiber Optic Towed Decoy (F-15 FOTD); F-22; Joint Helmet Mounted Cueing System (JHMCS); Joint Strike Fighter (JSF); Miniature Air Launched Decoy (MALD); and other system ABL: Advance planning for EOA2, combined DT/OT, and IOT&E.	JTD); F-22; ystem.
		- APG-63: Execute IOT&E Phase I and write interim summary report. Detail planning for IOT&E Phase II ASTE: Conduct incremental IOT&E. Advance planning for FOT&E CMWS: Advance planning for combined DT/OT and IOT&E	nmary report. Detail planning for IOT&E Phase II. g for FOT&E. DT&F.	
		- B-1B CMUP Block E: Write OA report; complete detailed planning for and conduct IOT&E. - B-1B CMUP Block F: Executing OA; plan and execute combined DT/OT. Advance planning for IOT&E.	led planning for and conduct IOT&E. combined DT/OT. Advance planning for IOT&E.	
		 CV-22: Farticipate in OF1EVFOR-led MV-22 IO1&E. Flan and execute combined D1/O1. F-15 FOTD: Advance planning for combined DT/OT and IOT&E. F-22: Execute OA. Detailed planning and execution of combined DT/OT. Advance planning for IOT&E. JHMCS: Execute IOT&E and write final report (identified in the General category in the Feb 1999 R-2 Exhibit). 	. Flan and execute combined D1/O1. nd IOT&E. combined DT/OT. Advance planning for IOT&E. ied in the General category in the Feb 1999 R-2 Exhibit).	
E	O\$	- JSF: Execute EOA. Advance planning for combined DT/OT MALD: Detailed planning for IOT&E.	T/OT.	
<u>(</u>		(U) CATEGORY: SPACE SYSTEMS. Plan, execute, an Communications; Evolved Expendable Launch Vehicle (E IIR); MILSTAR II; National Polar-Orbit Ops Environmen	(U) CATEGORY: SPACE SYSTEMS. Plan, execute, and report IOT&E activities, to include the following: Advanced EHF Satellite Communications; Evolved Expendable Launch Vehicle (EELV); Global Broadcast System (GBS); Global Positioning Satellite Block IIR (GPS IIR); MILSTAR II; National Polar-Orbit Ops Environment Satellite System (NPOESS); Space Based InfraRed System (SBIRS); and other	tellite ock IIR (GPS ınd other
		systems Advanced EHF: Detailed planning for OA EELV: Detailed planning and execution of OA GBS: Execute combined DT/OT and MOT&E. Detailed planning for FOT&E.	d planning for FOT&E.	
4	Project 660191	Page 4 of	Page 4 of 10 Pages Exhibit R-2 (PE 0605712F)	E 0605712F)

RDT	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2000
BUDGET ACTIVITY 06 - Management and Support	PE NUMBER AND TITLE 0605712F Initial Operational Test & Evaluation	PROJECT Evaluation 660191
(U) A. Mission Description Continued	ption Continued	
(U) EY 2000 (\$ in Thousands) Continued - GPS IIR: Ex - MILSTAR II - NPOESS: Do - SBIRS: Com	 - GPS IIR: Execute combined DT/OT. Advance planning for IOT&E. - MILSTAR II: Plan and execute combined DT/OT. Detailed planning and execute MOT&E. - NPOESS: Detailed planning for OA. - SBIRS: Complete IOT&E and write final report. Perform initial OUE on post-Increment 1 ground system upgrade. 	n upgrade.
	 (U) CATEGORY: WEAPONS. Plan, execute, and report IOT&E activities, to include the following: AIM-9X Air-to-Air Missile; Hard Target Smart Fuse (HTSF); ICBM-MMIII Propulsion Replacement Program (PRP); Joint Air-to-Surface Standoff Missile (JASSM); Joint Standoff Weapon (JSOW); Wind Corrected Munitions Dispenser (WCMD); and other systems. - AIM-9X: Plan and assist DT. Detailed planning for IOT&E. - HTSF: Detailed planning for combined DT/OT. Advance planning for IOT&E. - PRP: Execute IOT&E and write final report. - JASSM: Conduct OA and combined DT/OT. Advance planning for IOT&E. - JSOW: Execute MOT&E and write final report. - WCMD: Execute combined DT/OT. Detailed planning and execution of IOT&E. 	M-9X Air-to-Air Missile; Hard Target Missile (JASSM); Joint Standoff
(U) \$0 (U) \$1,380	(U) CATEGORY: COMMAND, CONTROL, COMMUNICATIONS, COMPUTERS, AND INTELLIGENCE (C4I). Plan, execute, and report IOT&E activities, to include the following: Deliberate Crisis Action Planning and Execution System (DCAPES); Distributed Common Ground System (DCGS); Defense IEMATS (DIRECT); Global Air Traffic Management (GATM); Global Transportation Network (GTN); Integrated Broadcast System (IBS); ICBM Minuteman MEECN Program (ICBM MMP); Region/Sector Air Operation Center (R/SAOC); Theater Battle Management - Core Systems (TBM-CS); TRANSCOM Regulating and C2 Evacuation System (TRAC2ES); Global Transportation Network (GTN), and other systems. - DCAPES: Execute combined DT/OT and OUE DRECT: Execute combined DT/OT and write final report. Advance planning for FOT&E GATM: Execute EOA. Detailed planning and execution of combined DT/OT GTN: Execute Combined DT/OT and write OFT report IBS: Execute OUEs Advance planning for MOT&E ICBM MMP: Detailed planning and execution of combined DT/OT and IOT&E.	NCE (C4I). Plan, execute, and report APES); Distributed Common Ground ration Network (GTN); Integrated 1 Center (R/SAOC); Theater Battle 1; Global Transportation Network
Project 660191	Page 5 of 10 Pages	Exhibit R-2 (PE 0605712F)

	RDT&E BUDGET ITEM JUSTIFICATION SI	STIFICATION SHEET (R-2 Exhibit)	DATE February 2000
BUDGET ACTIVITY 06 - Managem	BUDGET ACTIVITY 06 - Management and Support	PE NUMBER AND TITLE 0605712F Initial Operational Test & Evaluation	PROJECT Valuation 660191
(U) A. Mission D	A. Mission Description Continued		
(U) EY 2000 (\$ ir	EY 2000 (\$ in Thousands) Continued - R/SAOC: Execute OFT and IOT&E. Advance planning for FOT&E. - TBM-CS: Execute combined DT/OT. Advance planning for IOT&E. - TRAC2ES: Continue combined DT/OT. Detailed planning and execution of IOT&E.	g for FOT&E. ng for IOT&E. ning and execution of IOT&E. Write final report.	
(U) \$0	- GIN: DI/OI final report was published Oct 99.		
(U) \$1,331	(U) CATEGORY: COMBAT SUPPORT. Plan, execute, and report IOT&E activities, to include the following: Combat Survivor Evader Locator (CSEL); Defense Civilian Personnel Data System (DCPDS); Integrated Logistics System - Supply (ILS-S); Joint Ammunitions Management Standard System (IAMS): Joint Computer Aided Angund Ind Systems (ICAIS): Joint Mission Planning System (IAMS): Joint Computer Aided Angund Ind Systems (ICAIS): Joint Mission Planning Systems (ICAIS)	and report IOT&E activities, to include the following (DCPDS); Integrated Logistics System - Supply (II)	ng: Combat Survivor Evader
	Precision Approach & Landing system (JPALS); Joint Service Elec Combat System Tester (JSECST); Joint Simulation System (JSIMS); Next Generation Small Loader (NGSL); Range Standardization Automation (RSA); Tactical Weather Radar (TWR); Common Low Observable	rvice Elec Combat System Tester (JSECST); Joint State Automation (RSA); Tactical Weather Radar (TWR	inulation System (JSIMS); Next ;; Common Low Observable
	Verification System (CLOVerS), and other systems CSEL: Detailed planning and execute combined DT/OT), and other systems. execute combined DT/OT and OA. Advance planning for IOT&E.	
	- DCPDS: Detailed planning and execution of IOT&E.		
		for IOT&E.	
	- JCALS: Execute incremental combined DT/OT events and dedicated OT events. - JMPS: Detailed planning and execution of EOA. Advance planning for IOT&E.	and dedicated OT events. nce planning for IOT&E.	
	- JPALS: Advance planning and execution of EOA.	front remort	
	- JSIMS: Plan and execute B2 CE OA and write final rep	CE OA and write final report (National Air Space Model (NASM) was combined with JSIMS).	ned with JSIMS).
	 NGSL: Complete OA and write report. Detailed planning for IOT&E. RSA: Execute incremental OUEs 	ing for IOT&E.	
	- TWR: Complete IOT&E and write final report CLOVerS: Advance planning for IOT&E (listed in the General category in the Feb 1999 R-2 Exhibit)	Teneral category in the Feb 1999 R-2 Exhibit)	
(U) \$0			
(U) \$1,106	(U) CATEGORY: TEST SUPPORT. Provide test capabilities infrastructure to support OT. - Test Capabilities Infrastructure: Develoning software evaluation tools non-MRTFR instrumentation and missile warning sensor stimulator	oilities infrastructure to support OT.	issile warning sensor etimulator
(U) \$26,510	Total		
Project 660191		Page 6 of 10 Pages	Exhibit R-2 (PE 0605712F)

	RDT	RDT&E BUDGET ITEM JUSTIFICATION SH	JSTIFICATION SHEET (R-2 Exhibit)	DATE Fahrijary 2000	
BUDC	BUDGET ACTIVITY		PE NUMBER AND TITLE	- Amar	ECT
90	06 - Management and Support		0605712F Initial Operational Test & Evaluation	aluation 660191	191
9	A. Mission Description Continued	tion Continued			
9	FY 2001 (\$ in Thousands)	sands)			
9	\$15,795	(U) CATEGORY: AIR SYSTEMS. Plan, execute, and report IOT&E activities, to include the following: Airborne Laser (ABL); F-15 APG-63	sport IOT&E activities, to include the following: Air	rborne Laser (ABL); F-15 A	PG-63
		Radar Upgrade (APG-63); Advanced Strategic & Tactical IR Expendable (ASTE); B-1B Conventional Mission Upgrade Program (CMUP) BLK E; B-1B CMUP BLK F; Common Missile Warning System (CMWS); CV-22; F-15 Fiber Optic Towed Decoy (F-15 FOTD); F-22; Joint Strike	IR Expendable (ASTE); B-1B Conventional Mission (CMWS); CV-22; F-15 Fiber Optic Towed Decoy	Upgrade Program (CMUP) (F-15 FOTD); F-22; Joint St	BLK
		Fighter (JSF); Miniature Air Launched Decoy (MALD); and other systems.	nd other systems.		
		 ABL: Detailed planning for EOA2. Advance planning for combined DT/OT, and IOT&E. APG-63: Execute IOT&E Phase II and write final report 	or combined DT/OT, and IOT&E.		
		- ASTE: Conduct incremental IOT&E. Advance planning for FOT&E.	for FOT&E.		
		- B-1B CMUP Block E: Complete IOT&E and write final test report.	test report.		
		- B-1B CMUP Block F: Complete OA and write report; continue combined DT/OT. Detailed planning for IOT&E.	ontinue combined DT/OT. Detailed planning for IOT	ræe.	
		CM 33. Continuing for combined DI/OI and IOI &E	100E. - 6 CV 22 IOT 8-F		
		 - Cv-2z: Continuing combined D1/O1. Detailed planning for Cv-2z 1O1&E. - F-15 FOTD: Advance planning for combined DT/OT and IOT&E. 	g 10f CV-22 101&E. d 10T&E.		
		- F-22: Execute OA. Detailed planning and execution of c	planning and execution of combined DT/OT. Detailed planning for IOT&E.		
		- JSF: Execute EOA. Advance planning for combined DT/OT.	/OT.		
Œ	0\$	- MALD: Execute IOT&E and write final report.			
3	\$1,295	(U) CATEGORY: SPACE SYSTEM. Plan, execute, and	STEM. Plan, execute, and report IOT&E activities, to include the following: Advanced EHF Satellite	Advanced EHF Satellite	
		Communications (Advanced EHF); Evolved Expendable Launch Vehicle (EELV); Global Broadcast System (GBS); Global Positioning Satellite Block IIR (GPS IIR); National Polar-Orbit Ons Fruironment Satellite System (NPOESS); MILSTAR II: Space Based InfraRed System (SRIRS).	HF); Evolved Expendable Launch Vehicle (EELV); Global Broadcast System (GBS); Global Positioning Satellite Polar-Orbit Ons Environment Satellite System (NPOFSS): MIL STAR IT: Space Based InfraRed System (SRIRS):	GBS); Global Positioning Sa Based InfraRed System (SF	tellite
		and other systems.			`` !
		- Advanced EHF: Execute OA and write report.			
		- EELV: Complete OA and write report. Detailed planning for IOI & E.	ig for IOT&E.		
		- GDS. Complete MOT&E and Witte Infal report. Execute FOT&E. - GPS ITR: Execute combined DT/OT. Advance planning for IOT&E.	for IOT&E		
		- MILSTAR II. Complete MOT&E and write final report.			
		- NPOESS: Conduct OA and write report.			
į	Ş	- SBIRS: Continue performing OUEs to support Increment	OUEs to support Increment 2 ground system upgrades.		
<u> </u>	80				
۵	Project 660191	Page 7 of	Page 7 of 10 Pages	Exhibit R-2 (PE 0605712F)	12F)

	RDT&E	BUDGET ITEM JU	STIFICATION SHEET (R-2 Exhibit)	те February 2000
90 - 90	BUDGET ACTIVITY 06 - Management and Support	nd Support	PE NUMBER AND TITLE 0605712F Initial Operational Test & Evaluation	PROJECT 660191
9	A. Mission Description Continued	ion Continued		
99	EY 2001 (\$ in Thousands) Continued \$6,883 (U) CATEGO! Air-to-Air Mis	XY: WEAPONS. sile; Hard Target	Plan, execute, and report IOT&E activities, to include the following: Agent Defeat Weapon (ADW); AIM-9X Smart Fuse (HTSF); Joint Air-to-Surface Standoff Missile (JASSM); Joint Standoff Weapon (JSOW); and other	efeat Weapon (ADW); AIM-9X doff Weapon (JSOW); and other
		systems ADW: Early Involvement AIM-9X: Continue detailed planning and execute IOT&E HTSF: Detailed planning and execution of IOT&E JASSM: Detailed planning and execution of IOT&E JSOW: Advance planning for FOT&E.	JT&E.	
£	\$0 \$1,219	(U) CATEGORY: COMMAND, CONTROL, COMNION OF Sectivities, to include the following: Deliberate System (DCGS); Global Air Traffic Management (GA	(U) CATEGORY: COMMAND, CONTROL, COMMUNICATIONS, COMPUTERS, AND INTELLIGENCE (C41). Plan, execute, and report IOT&E activities, to include the following: Deliberate Crisis Action Planning and Execution System (DCAPES); Distributed Common Ground System (DCGS); Global Air Traffic Management (GATM); Integrated Broadcast System (IBS); ICBM Minuteman MEECN Program (ICBM	(C41). Plan, execute, and report); Distributed Common Ground nan MEECN Program (ICBM
		MMP); Region/Sector Air Operation Center (R/SAOC); Th (GTN), and other systems. - DCAPES: Complete OUE and write final report. - DCGS: Complete combined DT/OT and execute IOT&E. - GATM: Continue to execute combined DT/OT.	MMP); Region/Sector Air Operation Center (R/SAOC); Theater Battle Management - Core Systems (TBM-CS); Global Transportation Network (GTN), and other systems. - DCAPES: Complete OUE and write final report DCGS: Complete combined DT/OT and execute IOT&E GATM: Continue to execute combined DT/OT.	Global Transportation Network
E	Ş	- ICBM MMP: Complete IOT&E and write final report R/SAOC: Execute FOT&E TBM-CS: Execute Combined DT/OT. Detailed planning for IOT&E GTN: DT/OT final report was published Oct 99.	nt. ming for IOT&E.	
(C) \$1,	\$1,546	(U) CATEGORY: COMBAT SUPPORT. Plan, exec Locator (CSEL): Integrated Logistics System - Supply Planning System (JMPS); Joint Precision Approach & Loader (NGSL); Range Standardization Automation (F-CSEL: Detailed planning for IOT&E.	(U) CATEGORY: COMBAT SUPPORT. Plan, execute, and report IOT&E activities, to include the following: Combat Survivor Evader Locator (CSEL): Integrated Logistics System - Supply (ILS-S); Joint Ammunitions Management Standard System (JAMSS); Joint Mission Planning System (JMPS); Joint Precision Approach & Landing system (JPALS); Joint Simulation System (JSIMS); Next Generation Small Loader (NGSL); Range Standardization Automation (RSA); Common Low Observable Verification System (CLOVerS), and other systems CSEL: Detailed planning for IOT&E.	: Combat Survivor Evader m (JAMSS); Joint Mission S); Next Generation Small OVerS), and other systems.
۵	Project 660191	Page	Page 8 of 10 Pages	Exhibit R-2 (PE 0605712F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	HEET (R-2 Exhibit)		DATE February 2000	, 2000
90 90	BUDGET ACTIVITY 06 - Management and Support 06 - Management and Support	PE NUMBER AND TITLE 0605712F Initial Operational Test & Evaluation	tional Test & E	Evaluation	РРОЈЕСТ 660191
<u>(5</u>	A. Mission Description Continued				
9	FY 2001 (\$ in Thousands) Continued		-		
	 L.S-S: Advance planning for Combined Test Force (C.1r) activities for next software release. JAMSS: Detailed planning and execution of IOT&E. Write final report. JMPS: Detailed planning and execution of IOT&E. 	r) activities for next software /rite final report.	release.		
	- JPALS: Complete EOA and write report JSIMS: Plan and execute B3 CE OA and write final report.	ť			
	- NGSL: Execute IOT&E and write final report RSA: Execute incremental OUEs.				
(1)	- CLOVerS: Detailed planning and execution of IO1&E. Write final report.	Write final report.			
<u>3</u>	.500 (U) CATEGORY: TEST SUPP	ORT. Provide test capabilities infrastructure to support OT. Continue to develon test capability requirements and shortfalls (i.e. software evaluation tools, mod/sim. etc).	rt OT. shortfalls (i.e. softw	are evaluation tools. n	nod/sim. etc).
9	\$28,238 Total				
<u> </u>	B. Budget Activity Justification This program element is in Budget Activity 6, RDT&E Management Support, because it funds weapon system IOT&E tests conducted effectiveness and suitability and to identify any operational deficiencies or need for modifications in support of the acquisition process.	Management Support, because it funds weapon system IOT&E tests conducted to evaluate a system's operational and deficiencies or need for modifications in support of the acquisition process.	l IOT&E tests condu f the acquisition pro	cted to evaluate a syst	em's operational
3	C. Program Change Summary (\$ in Thousands)	0001711	0000 23.5	1000	Ç F
9	Previous President's Budget (FY 2000 PBR)	<u>FY 1999</u> 27,294	$\frac{FY}{23,819}$	57 2001 28,689	1 oral Cost
3	Appropriated Value	29,541	27,219		
9	Adjustments to Appropriated Value a. Congressional/General Reductions	-2,247	-131		
	 b. Small Business Innovative Research c. Omnibus or Other Above Threshold Reprogram 		-406		
	d. Below Threshold Reprogram e. Rescissions	2,040 -163	-172		
9	f. Other Adjustments to Budget Years Since FY 2000 PBR			-451	
Œ.	Project 660191 Page 9 of	Page 9 of 10 Pages		Exhibit R-2 (PE 0605712F)	E 0605712F)
	96	955			

	RDT&E BUDGET ITEM JUSTIFICA	STIFICATION SHEET (R-2 Exhibit)	R-2 Exhi	bit)	DA	DATE February 2000	2000
90	BUDGET ACTIVITY 06 - Management and Support	PE NUMBER AND TITLE 0605712F Initial	AND TITLE : Initial O	perational	PE NUMBER AND TITLE OFFICIONAL TEST & Evaluation	aluation	РРОЈЕСТ 660191
9	C. Program Change Summary (\$ in Thousands) Continued		EV 1000	EV 2000		EV 2001	
3	Current Budget Submit/FY 2001 PBR		29,171	26,510	-1	28,238	TBD
<u>5</u>	Significant Program Changes: FY99: a below threshold reprogramming increase of \$2,400K in support of Y2K requirements; reductions of \$360K to fund other Air Force Requirements. FY00: The FY 2000 appropriated value includes a Congressional plus up of \$3.4M for IOT&E (no specific language).	pport of Y2K requiremen	nts; reduction: [&E (no speci	s of \$360K to fic language).	fund other Air	Force Requirements	ý
9	D. Other Program Funding Summary (\$ in Thousands) FY 1999 FY 2000 Actual Estimate Est	FY 2001 FY 2002 Estimate Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Fertimate	Cost to	Total Cost
9							
9	E. Acquisition Strategy N/A						
<u>(a)</u>	F. Schedule Profile	FV 1000		TV 2000	000	1000 AP	-
Ţ	IOT & B is not on acconicition program	1 2 3	4	- 2	3 4	1 2 2	3 4
<u> </u>	s in any one fiscal	year. Specific IOT&E schedules can be made available on a case-by-case basis through AFOTEC, Director of	n be made ava	ilable on a cas	e-by-case basis	s through AFOTEC	, Director of
	Project 660191	Page 10 of 10 Pages		-		Exhibit R-2 (PE 0605712F)	.0605712F)

PE NUMBER: 0605807F
PE TITLE: Test and Evaluation Support

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	RDT&E BUDGET ITEM JU	ISTIFIC	ATION	JSTIFICATION SHEET (R-2 Exhibit)	(R-2 Ex	hibit)		DATE	Februa	February 2000
90 90	BUDGET ACTIVITY 06 - Management and Support			PE NUMBER AND TITLE 0605807F Test a	AND TITLE F Test a	PE NUMBER AND TITLE 0605807F Test and Evaluation Support	ation Su	pport		
	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	351,170	381,476	386,205	388,017	397,530	403,332	418,738	Continuing	TBD
6606TG	TG 46 Test Group	19,172	21,292	20,718	22,691	23,070	23,542	23,638	Continuing	TBD
6606TS	iTS Test and Evaluation Support	331,998	360,184	365,487	365,326	374,460	379,790	395,100	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0
9	A. Mission Description Test facilities, capabilities and resources operated through this program include wind tunnels, rocket and jet engine test cells, limited space environmental simulation chambers, armament test ranges, climatic test facilities, avionics test facilities, aircraft testbeds, dry lakebed landing sites, instrumented test ranges, maintenance and repair of test facilities, civilian payroll, and contractor services. It also provides resources for maintaining Air Force Materiel Command (AFMC) assigned test and test support coded aircraft. No acquisition contracts are funded from this program; test support contracts for services and supplies and equipment are predominantly awarded on the basis of full and open competition. Beginning in FY00, the justification narratives within each center have been modified to include standardized categories which better explain the nature of the test and evaluation infrastructure support activities.	ough this pro s, avionics to services. It mded from t eginning in I	gram includest facilities, also providhis program FY00, the junitude in infrastruct	e wind tunn, aircraft test es resources; test suppor stification nature support	els, rocket a beds, dry lal for maintain t contracts f arratives wit activities.	nd jet engine kebed landin ning Air For or services a hin each cer	test cells, l g sites, insti ce Materiel on d supplies tter have bee	imited space umented tes Command (, and equipm en modified	ough this program include wind tunnels, rocket and jet engine test cells, limited space environmental simules, avionics test facilities, aircraft testbeds, dry lakebed landing sites, instrumented test ranges, maintenance reservices. It also provides resources for maintaining Air Force Materiel Command (AFMC) assigned test afunded from this program; test support contracts for services and supplies and equipment are predominantly seginning in FY00, the justification narratives within each center have been modified to include standardize and evaluation infrastructure support activities.	ntal simulation intenance and gned test and test ominantly andardized
9	B. Budget Activity Justification This program element is in Budget Activity 6, RDT&E Management Support, because it funds infrastructure resources (civilians, aircraft, facilities and ranges) to operate the Air Force test activities which are included in the Department of Defense (DoD) Major Range and Test Facility Base (MRTFB).	E Managem 1 in the Dep	ent Support, artment of D	because it f	unds infrastı)) Major Ra	ructure resor	rces (civilia t Facility Ba	ins, aircraft, ise (MRTFB	facilities and:	franges) to
3	C. Program Change Summary (\$ in Thousands)									
999	Previous President's Budget (FY 2000 PBR) Appropriated Value Adjustments to Appropriated Value a. Congressional/General Reductions b. Small Business Innovative Research c. Omnibus or Other Above Threshold Reprogram d. Below Threshold Reprogram				FY 1999 353,531 363,168 -9,637 0 7,903 -5,563		FY 2000 392,104 382,104 -396 0 1,338	FY 2001 380,635	л 5	Total Cost

Page 1 of 11 Pages

Exhibit R-2 (PE 0605807F)

	RDT&E BUDGET ITEM JUSTIFICATION	STIFICATION SHEET (R-2 Exhibit)		DATE February 2000	000
90 06	BUDGET ACTIVITY 06 - Management and Support	PE NUMBER AND TITLE 0605807F Test and Evaluation Support	aluation Supp	ort	
(3	C. Program Change Summary (\$ in Thousands) Continued	FY 1999	FX 2000	EX 2001	Total Cost
99	e. Rescissions f. Other Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR	-1,964 -2,737 351.170	-1,570	5,570 386.205	TBD
<u> </u>	Significant Program Changes: FY00 Congressional adjustments: Program reduction of \$15M; Big Crow Program Office addition of \$5M. FY00 reductions funded other AF and DoD requirements.	Program Office addition of \$5M.			
		·			
	Page	Page 2 of 11 Pages		Exhibit R-2 (PE 0605807F)	605807F)

	RDT&	RDT&E BUDGET ITEM JU	STIFICATION SHEET (R-2A Exhibit)	TION 8	энеет (R-2A E	xhibit)		DATE		February 2000
90 90	BUDGET ACTIVITY 06 - Management and Support	nd Support			PE NUMBER AN 0605807F	PE NUMBER AND TITLE 0605807F Test a	ind Evalu	⊌D TITLE Test and Evaluation Support	pport		PROJECT 6606TG
	COST (\$	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
6606TG	IG 46 Test Group		19,172	21,292	20,718	22,691	23,070	23,542	23,638	Continuing	TBD
ව	A. Mission Description This project funds test in non-repairable or obsole support contract costs fo Group (TG) facilities: C Radar Cross Secton (RC systems. HSTT capabilitrajectory analysis and heasurements, glint and competition.	ifrastructure overhead supporte test equipment; test infrast r hardware and software engientral Inertial Guidance Test S) Test Factility (NRTF). C ties include full-scale testing igh speed photography. NRT near field measurements for	t including: (ructure for di meering and Facility (Cli IGTF provid in flight env F provides ra low observal	Command a ata collectio maintenance GTF/746th 'les independ ironments, I adar cross se ble targets.	and supervise n, transmiss e. Project in Test Squadri lent assessmi realistic live- ection (RCS) The 46th TC	ory staffs; st ion, reductic iffastructure on), the Higl ents of inert fire simulat of monostatic i support se	upply stocks; on, and analy support is p h Speed Test ial compone ions, test itel and bi-static	; upkeep, ref ysis; civilian rovided for i t Track (HSZ nts, aircraft m and target c amplitude acts are awai	t including: Command and supervisory staffs; supply stocks; upkeep, refurbishment, repair, and replaceme ructure for data collection, transmission, reduction, and analysis; civilian salaries, utilities, temporary duty neering and maintenance. Project infrastructure support is provided for the unique capabilities of the 46th Facility (CIGTF/746th Test Squadron), the High Speed Test Track (HSTT/846th Test Squadron) and the IGTF provides independent assessments of inertial components, aircraft navigation systems, and missile gi in flight environments, realistic live-fire simulations, test item and target fragment recovery, and precision in flight environments, section (RCS) monostatic and bi-static amplitude and phase measurements, antenna low observable targets. The 46th TG support services contracts are awarded on the basis of full and open	repair, and rapair, and rapabilities, tempo apabilities of st Squadron, ystems, and scovery, and leasurements basis of full a	t including: Command and supervisory staffs; supply stocks; upkeep, refurbishment, repair, and replacement of ructure for data collection, transmission, reduction, and analysis; civilian salaries, utilities, temporary duty travel, ineering and maintenance. Project infrastructure support is provided for the unique capabilities of the 46th Test Facility (CIGTF/746th Test Squadron), the High Speed Test Track (HSTT/846th Test Squadron) and the National IGTF provides independent assessments of inertial components, aircraft navigation systems, and missile guidance in flight environments, realistic live-fire simulations, test item and target fragment recovery, and precision F provides radar cross section (RCS) monostatic and bi-static amplitude and phase measurements, antenna pattern low observable targets. The 46th TG support services contracts are awarded on the basis of full and open
99	EY 1999 (\$ in Thousands) \$3,905 Cen	tral Inertial Guidance Test tinued Global Positioning S		3TF): Provide Program Of	ded infrastru ffice (GPS-J	icture test su PO) Respon	ipport for prisible Test O	ograms such	n as Advance (RTO) respo	ed Inertial Consibilities, F	Facility (CIGTF): Provided infrastructure test support for programs such as Advanced Inertial Concepts (AICON), system-Joint Program Office (GPS-JPO) Responsible Test Organization (RTO) responsibilities, Project 2000
<u>(</u>	\$4,554	Augmentation System, GPS integrated and embedded INS program, aircraft navigation systems, including B-2 and F-22, munitions navigation systems such as JDAM and other programs. Holloman High Speed Test Track (HHSTT): Provided infrastructure test support (including full-scale testing simulating in-flight environments, realistic live-fire simulations, test item and target fragment recovery, and precision trajectory analysis and high speed photography) for the F-22 Ejection System, Advanced Concepts Escape System (ACES) II, Continuous Improvement Program (CIP), Standard Missile (SM) 2 Seeker, SM 2 Live Fire T&E (LFT&E), Patriot Advanced Capability (PAC) 3 LFT&E, Theater High Altitude Area Defense (THAAD) LFT&E, and other	tegrated and term tegrated and term programs ack (HHSTT test item and moepts Escal triot Advance	embedded 1): Provided target frag pe System (ed Capabiliti	Infrastructu ment recove ACES) II, C	i, nav war i, aircraft na re test supporty, and precontinuous I FT&E, The	y, redetal Ay vigation sys ort (includin, vision traject mprovemen! ater High Al	yiauton Admi tems, includ g full-scale t tory analysis t Program (C ltitude Area	ing B-2 and ing B-2 and testing simul testing simul tand high sp CIP), Standal Defense (TF	F-AA, wide F-22, munit lating in-fligl eed photogr rd Missile (S	tegrated and embedded INS program, aircraft navigation systems, including B-2 and F-22, munitions navigation ner programs. The programs are programs. The programs ack (HHSTT): Provided infrastructure test support (including full-scale testing simulating in-flight environments, test item and target fragment recovery, and precision trajectory analysis and high speed photography) for the F-22 procepts Escape System (ACES) II, Continuous Improvement Program (CIP), Standard Missile (SM) 2 Seeker, SM triot Advanced Capability (PAC) 3 LFT&E, Theater High Altitude Area Defense (THAAD) LFT&E, and other
9	\$4,423	programs. National RCS Cross Section Test Facility (NRTF): Provided infrastructure test support for programs such as static RCS testing for stores, low observable testbeds, and other classified programs.	est Facility (NRTF); classified programs	NRTF): Pro	vided infrası	tructure test	support for]	programs su	ch as static l	RCS testing	for stores, low
5	\$6,290			ort and sche	nand guidan duling for W	ice, resource VSMR airsp	managemer ace, photo ar	nt, plans and nd safety ch	l programs, r ase, support	protection se of air-to-air	(46TG): Provided command guidance, resource management, plans and programs, protection services, liaison support and scheduling for WSMR airspace, photo and safety chase, support of air-to-air and air-to-ground
<u>σ</u>	Project 6606TG			Page .	Page 3 of 11 Pages	Ş			Ä	hibit R-2A (Exhibit R-2A (PE 0605807F)
					050						

	RDT&E BL	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 2000
90 0 9	BUDGET ACTIVITY 06 - Management and Support	pport	PE NUMBER AND TITLE 0605807F Test and Evaluation Support	PROJECT 6606TG
(D)	A. Mission Description Continued	ntinued		
<u>5</u>	FY 1999 (\$ in Thousar	pport equipment	services, and aerospace ground equipment support.	
9	\$19,172 Total Beginning in FY00, the justification narratives within evaluation infrastructure support activities.		each center have been modified to include standardized categories which better explain the nature of the test and	explain the nature of the test and
99	FY 2000 (\$ in Thousar \$3,913	nue test infrastructure overhead support to enabl	ids) Continue test infrastructure overhead support to enable testing for unclassified program such as AICON, continued GPS-JPO RTO	tinued GPS-JPO RTO
	respo embe (JDA THA.	responsibilities, GPS jamming and electronic countermeasures, NAVWAR, FAA, Wide Are embedded INS programs, aircraft navigation sytems, including B-2 and F-22, munitions navig (JDAM), the F-22A Ejection Seat, Joint Strike Fighter (JSF), SM 2 Seeker, SM-2 Forward Lo THAAD LFT&E, Army Tactical Infrared Countermeasure System (ATIRCMS) Phase II, Lor static RCS testing for stores. low observable testbeds, as well as multiple classified programs.	responsibilities, GPS jamming and electronic countermeasures, NAVWAR, FAA, Wide Area Augmentation System, GPS integrated and embedded INS programs, aircraft navigation systems, including B-2 and F-22, munitions navigation systems such as Joint Direct Attack Munition (JDAM), the F-22A Ejection Seat, Joint Strike Fighter (JSF), SM 2 Seeker, SM-2 Forward Looking Fuze, SM-2 LFT&E, PAC 3 LFT&E, THAAD LFT&E, Army Tactical Infrared Countermeasure System (ATIRCMS) Phase II, Long-Range Fiber Optic Guided (LONGFOG) missile, static RCS testing for stores. low observable testbeds, as well as multiple classified programs	or System, GPS integrated and uch as Joint Direct Attack Munition 1-2 LFT&E, PAC 3 LFT&E, Optic Guided (LONGFOG) missile,
55	\$8,987 Contr \$8,392 T&E	Contractor Services (in-house contract support activities) T&E Civilian Pay. Filled technical positions.	(sa)	
9	\$21,292 Total			
99	FY 2001 (\$ in Thousands) \$3,652 Conti	ds) Continue test infrastructure overhead support to enable responsibilities. GPS imming and electronic counter	lds) Continue test infrastructure overhead support to enable testing for unclassified program such as AICON, continued GPS-JPO RTO responsibilities. GPS iamming and electronic countermeasures. NAVWAR. FAA. Wide Area Augmentation System. GPS integrated and	tinued GPS-JPO RTO System. GPS integrated and
	embe Seat,	embedded INS programs, aircraft navigation sytems including B-2 and F-22, munitions navig Seat, SM 2 Seeker, SM-2 Forward Looking Fuze, SM-2 FLT&E, PAC 3 LFT&E, THAAD L1 static RCS testing for stores, low observable testheds, as well as multiple classified programs.	embedded INS programs, aircraft navigation sytems including B-2 and F-22, munitions navigation systems such as JDAM, the F-22A Ejection Seat, SM 2 Seeker, SM-2 Forward Looking Fuze, SM-2 FLT&E, PAC 3 LFT&E, THAAD LFT&E, ATIRCMS Phase II, LONGFOG missile, static RCS testing for stores, low observable testheds as well as multiple classified programs.	uch as JDAM, the F-22A Ejection AS Phase II, LONGFOG missile,
555	\$8,428 Contr \$8,638 T&E \$20,718 Total	Contractor Services (in-house contract support activities) T&E Civilian Pay Total	ies)	
9	B. Project Change Summary (U) Significant Program Changes: None	្រុវ nges: None		
Д.	Project 6606TG	Page	Page 4 of 11 Pages	Exhibit R-2A (PE 0605807F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	GET ITEN	A JUSTIF	CATION	SHEET (I	8-2A Exh	lbit)	Δ	DATE February 2000	v 2000
90 06	вирсет астіліту 06 - Management and Support	ort			PE NUMBER AND TITLE 0605807F Test		⊌р тіт∟Е Test and Evaluation Support	n Support		PROJECT 6606TG
(D)	C. Other Program Funding Summary (\$ in Thousands) FY 1999 FY 2000 Actual Estimate	mmary (\$ in 7 EY 1999 Actual	Chousands) FY 2000 Ferimate	EY 2001 Estimate	FY 2002 Fetimate	FY 2003 Ferimate	FY 2004 Fetimate	FY 2005 Estimate	Cost to	Total Cost
99										
9	PE 0604759F, Major T&E Investment (Technical capability improvement and	400	0	0	949	1,018	1,098	1,255		TBD
9	modernization) PE 0604256F, Threat	1,774	2,003	1,705	2,075	2,140	1,743	1,934		TBD
9	Simulator PE 0604940D, Central Test &	6,500	8,395							TBD
,										
	capacinities). Service programs compete for CTEIP funds on a yearly basis. EV2001 through FV2005 are									
	To Be Determined.									
9	D. Acquisition Strategy Not applicable									
9	E. Schedule Profile				FV 1000		FV 2000	000	r.v	EV 2001
1	V/1X			_	2 3	4	2 2	3 4	1 2	3 4
9	(U) IN/A 46TG infrastructure support operations are continuous and are not driven by discrete start/end dates.	rations are con	inuous and are	not driven by	discrete start/e	nd dates.				
Ľ.	Project 6606TG			Pag	Page 5 of 11 Pages				Exhibit R-2A (PE 0605807F)	PE 0605807F)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	STIFIC/	TION &	SHEET (R-2A E	khibit)		DATE		February 2000
BUDGET ACTIVITY 06 - Management and Support			PE NUMBEF 0605807	PE NUMBER AND TITLE O605807F Test a	nd Evalu	PE NUMBER AND TITLE 0605807F Test and Evaluation Support	pport		. РКОЈЕСТ 6606TS
COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
6606TS Test and Evaluation Support	331,998	360,184	365,487	365,326	374,460	379,790	395,100	395,100 Continuing	TBD

(U) A. Mission Description

temporary duty travel; support contract costs for hardware and software engineering and maintenance; and minor improvement and modernization projects. It also funds maintenance. Test and Evaluation (T&E) Support funds test infrastructure overhead activities including: Command and supervisory staffs; supply stocks; maintenance, comprised of 724 square miles of land area, and approximately 123,000 square miles of water space. AAC provides the test infrastructure and overhead required for the and determines target/test item spectral signatures for DOD and allied forces. AAC provides a scientific test process that supports the development and enhancement of and allied forces. The AFFTC mission includes the United States Air Force (USAF) Test Pilot School. (3) Air Armament Center (AAC) located at Eglin AFB, FL, is Information Distribution System (JTIDS), Joint Surveillance Target Attack Radar System (JSTARS), Combat Talon, etc. T&E support services contracts are awarded Development Center (AEDC), located at Arnold Air Force Base (AFB), TN, whose test infrastructure overhead supports operations for the largest complex of ground repair, and replacement of worn or obsolete test equipment and facilities; test infrastructure for data collection, transmission, reduction, and analysis; civilian salaries; munitions systems that support tri-service smart weapons development. AAC technology is compatible with weapon systems to be tested such as Advanced Medium vehicles, unmanned miniature vehicles, cruise missiles, parachute delivery/recovery systems, cargo handling systems, and Electronic Warfare (EW) systems for DoD overhead supports weapons system development and operational test and evaluation for aircraft, aircraft subsystems and aircraft weapon systems, aerospace research Control, Communications, Computers and Intelligence (C41) systems; target acquisition and weapon delivery systems; a multi-service climatic simulation capability, chambers, hyperballistic ranges; and other specialized facilities). (2) Air Force Flight Test Center (AFFTC), located at Edwards AFB, CA, whose test infrastructure conduct of developmental and operational test and evaluation of non-nuclear air armaments (including aircraft guns, ammunition, bombs, and missiles); Command, This project provides resources to operate the Air Force test activities which are included in the Department of Defense (DoD) Major Range and Test Facility Base chambers, armament test ranges, climatic test facilities, avionics test facilities, aircraft testbeds, dry lakebed landing sites, instrumented test ranges, and test aircraft update/inspection; modifications and any other depot level repairs required by the aircraft System Program Directors (SPD); engine overhauls; depot-provided area (MRTFB). Test facilities/capabilities operated through this program include wind tunnels, rocket and jet engine test cells, limited space environmental simulation Range Air-to-Air Missile (AMRAAM), Joint Direct Attack Munition (JDAM), AGM-130, Advanced Short Range Air-to-Air Missile (ASRAAM), Joint Tactical overhead test aircraft depot level maintenance such as: Programmed Depot Maintenance (PDM), the calendar-based cyclic scheduling of aircraft into depots for test facilities in the free world (includes transonic, supersonic, and hypersonic wind tunnels; rocket motor and turbine engine test cells; space environmental test assistance; and assorted ground support equipment overhauls. Three major Air Force test centers are supported by this project: (1) Arnold Engineering and on the basis of full and open competition.

Exhibit R-2A (PE 0605807F)
Page 6 of 11 Pages
Project 6606TS

	RDT&I	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 2000
90 0	вирсет астіліту 06 - Management and Support		PE NUMBER AND TITLE 0605807F Test and Evaluation Support	PROJECT 6606TS
(D)	A. Mission Description Continued	on Continued		
5	FY 1999 (\$ in Thousands)	<u>nds)</u> ARNOI D ENGINEERING AND DEVELOPMENT CENTER (AFDC)	JTER (ARDC)	
39		Continued test infrastructure overhead support to enable ground testing for classified programs, and unclassified programs (F-22, JDAM, F-15, F-16, Joint Strike Fighter (JSF), B-1B, B-2, C-130, Advanced Medium Range Air to Air Missile (AMRAAM), Air Intercept Missile (AIM) 9X, Minuteman, Evolved Expandable Launch Vehicle (EELV), Titan IV, F-18, F404, F414, F119, and Tunnel 9).	er bergebergen (F-22, JDAM, F-15, B-15, B-18). School of the programs, and unclassified programs (F-22, JDAM, F-15, B-18, B-2, C-130, Advanced Medium Range Air to Air Missile (AMRAAM), Air Intercept Missile (AIM) 9X, le Launch Vehicle (EELV), Titan IV, F-18, F404, F414, F119, and Tunnel 9).	ied programs (F-22, JDAM, F-15,), Air Intercept Missile (AIM) 9X,
599	\$13,436 \$16,376 \$0	T&E specific Base Operating Support (BOS) requirements. Maintenance, repair and minor construction for test infrastructure requirements.	is. tructure requirements.	
3	\$0	AIR FORCE FLIGHT TEST CENTER (AFFTC)	:	
<u> </u>	\$96,009	Continued to provide test infrastructure overhead support enabling testing of the B-1B, B-2, F-16, F-15, F-15E, F-22, Advanced Fighter Technology Integration (AFTI)/F-16, C-17, Avionics Test and Integration Complex (ATIC), Advanced Range Instrumentation Aircraft (ARIA), Electronic Combat Countermeasures (ECCM), EW (B-1B ALQ-161, F-16 AN/ASQ-213, C-130 ALQ-172, etc.) and classified programs.	enabling testing of the B-1B, B-2, F-16, F-15, F-15 t and Integration Complex (ATIC), Advanced Rang. ALQ-161, F-16 AN/ASQ-213, C-130 ALQ-172, et	E, F-22, Advanced Fighter e Instrumentation Aircraft (ARIA), tc.) and classified programs.
9	\$21,800	USAF Test Pilot School operating costs.		
9	\$4,544 \$3.187	Programmed Depot Maintenance and engine overhauls for aircraft assigned to AFFTC. T&E snecific BOS requirements.	r aircraft assigned to AFFTC.	
<u>(</u> 5)	\$1,460 \$0	Maintenance, repair and minor construction for test infrastructure requirements.	tructure requirements.	
3	80	AIR ARMAMENT CENTER (AAC)		
<u> </u>	\$62,931	Continued test infrastructure support for non-nuclear air armaments (AMRAAM, SEEK EAGLE, Theater Missile Defense (TMD), JDAM, Joint Stand-Off Weapon (JSOW), Wind Corrected Munitions Dispenser (WCMD), Joint Air-to-Surface Stand-Off Missile (JASSM) etc.); C4I/Command and Control Consolidated Test Force (C2CTF) (JTIDS, Base and Installation Security System (BISS), TMD, Theater Battle	rmaments (AMRAAM, SEEK EAGLE, Theater Mi bispenser (WCMD), Joint Air-to-Surface Stand-Off (TIDS, Base and Installation Security System)	ssile Defense (TMD), JDAM, Joint Missile (JASSM) etc.); 1 (BISS), TMD, Theater Battle
£	702 C3	Management Core System (TBMCS), and aircraft software upgrades (Air Force Mission Support System (AFMSS)).	re upgrades (Air Force Mission Support System (AF	iMSS)).
3 (3	\$2,384 \$7,044	rrogrammed Depot Mannenance and engine overnauls for ancraft assigned to AAC. T&E specific BOS requirements.	r airctait assigned to AAC.	
33	\$1,639 \$331,998	Maintenance, repair and minor construction for test infrastructure requirements. Total	tructure requirements.	
	Beginning in FY00, the justification narrat evaluation infrastructure support activities.	Beginning in FY00, the justification narratives within each center have been modified to include standardized categories which better explain the nature of the test and evaluation infrastructure support activities.	dified to include standardized categories which bette	explain the nature of the test and
ம	Project 6606TS	Page 7 o.	Page 7 of 11 Pages	Exhibit R-2A (PE 0605807F)

	RDT&	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 2000
90 -	BUDGET ACTIVITY 06 - Management and Support	nd Support	PE NUMBER AND TITLE 0605807F Test and Evaluation Support	PROJECT 6606TS
9	A. Mission Description Continued	ion Continued		
9	FY 2000 (\$ in Thousands)	ands)		
9	\$0	ARNOLD ENGINEERING AND DEVELOPMENT CENTER (AEDC)	CENTER (AEDC)	
9	\$6,581	Continue test infrastructure overhead support to enabl	Continue test infrastructure overhead support to enable ground testing for classified programs, and unclassified programs (F-22, JDAM, F-15, F-16, ISF B-18, B-18, B-19, and Tunnel 9)	d programs (F-22, JDAM, F-15,
9	\$21,200	Utilities and maintenance and repair for test unique infrastructure.	office of the state of the stat	
S E	\$95,600	Contractor Services (in-house contract support activities).	ties).	
<u>e</u>	\$250	e Research an	d Development (R&D) efforts in Imaging Spectrometer Development (AEDC/Canada). Continue effort to pool	C/Canada). Continue effort to pool
		the spatial and spectral advances of both the US and C	the spatial and spectral advances of both the US and Canada, and develop a high-resolution sensor system capable of characterizing signatures of	able of characterizing signatures of
		rockets and aircraft, for drug interdiction, and identify PE 0603790F, NATO Cooperative R&D.	rockets and aircraft, for drug interdiction, and identifying trace quantities of a broad spectrum of gases in the environment. Previously funded in PE 0603790F, NATO Cooperative R&D.	environment. Previously funded in
9	\$0	•		
9	\$0	AIR FORCE FLIGHT TEST CENTER (AFFTC)		
9	\$28,137	Continue to provide test infrastructure overhead supp	Continue to provide test infrastructure overhead support enabling testing of the B-1B, B-2, B-52, F-16, F-15, F-15E, F-22, F-117, AFTI/F-16,	F-15E, F-22, F-117, AFTI/F-16,
		C-17, ATIC, ARIA, ECCM, EW (B-1B ALQ-161, F-	C-17, ATIC, ARIA, ECCM, EW (B-1B ALQ-161, F-26 AN/ASQ-213, C-130 ALQ-172, etc.), and classified programs. Provide funds for	programs. Provide funds for
(•	deferred and current equipment requirements.		
9	\$5,323	Utilities and maintenance and repair for test unique infrastructure.	offastructure.	
<u>)</u> {	\$31,3/3	Contractor Services (in-house contract support activities).	nes).	
9	\$21,954	Aircraft flying hour costs (to include USAF Test Pilot	Aircraft flying hour costs (to include USAF Test Pilot School) for pilot proficiency for sustained readiness to include deferred and projected	include deferred and projected
,		programmed depot maintenance, engine overhauls, pe	programmed depot maintenance, engine overhauls, petroleum, oils and lubricants (POL), increased depot level reparable (DLR) costs and related	I reparable (DLR) costs and related
į	(support. Global Hawk and F-22 workload increased.		
9	80			
≘ €	\$0 \$6 870	AIR ARMAMEN I CENTER (AAC) Continue test infrastructure overhead support for non-	AIR ARMAIMEN I CENTER (AAC) Continue fest infrastructure overhead sunnort for non-nuclear air armaments (AMRAAM SFFK FAGI F. TMD, IDAM, ISOW, WCMD, etc.):	ID IDAM ISOW WCMD etc.):
		C4I (JTIDS, BISS, TMD), and aircraft software upgrades.	rades.	
9	\$2,966	Utilities and maintenance and repair for test unique infrastructure.	ıfrastructure.	
9	\$17,317	Contractor Services (in-house contract support activities).	ties).	
<u>9</u>	\$40,148	T&E Civilian Pay.		
ď	Project 6606TS	Page	Page 8 of 11 Pages	Exhibit R-2A (PE 0605807F)

	RDT&	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	DATE	February 2000
90	BUDGET ACTIVITY 06 - Management and Support		PENUMBER AND TITLE 0605807F Test and Evaluation Support	PROJECT 6606TS
(a)	A. Mission Description Continued	otion Continued		
99	FX 2000 (\$ in Thousands) Continued \$10,326 Aircraft Suppo	sands) Continued Aircraft Support (Includes deferred and projected programmed depot maintenance; engine overhauls; petroleum, oils and lubricants (POL); and related support (Includes deferred and projected programmed depot maintenance). A C to meet proficiency flying goals	tenance; engine overhauls; petroleum, oils and lubric	cants (POL); and
9	\$360,184	Total	C to most profession of the Boars.	
55	FY 2001 (\$ in Thousands) \$0	<u>sands)</u> ARNOLD ENGINEERING AND DEVELOPMENT CENTER (AEDC)		
<u> </u>	\$6,698	Continue test infrastructure overhead support to enable ground testing for classified programs, and unclassified programs (F-22, JDAM, F-15, F-16, ISF, B-1B, B-2, C-130, AMRAAM, AIM 9X, Minuteman, EELV, Titan IV, F-18, F404, F414, F119, and Tunnel 9).	lassified programs, and unclassified programs (F-22 itan IV, F-18, F404, F414, F119, and Tunnel 9).	2, JDAM, F-15,
3	\$21,743	Utilities and maintenance and repair for test unique infrastructure.		
9	\$97,800	Contractor Services (in-house contract support activities).		
96	\$12,232 \$250	1 & E CIVILIAN 1 ay. NATO Cooperative Research and Development (R&D) efforts in Imaging Spectrometer Development (AEDC/Canada). Continue effort to pool	Spectrometer Development (AEDC/Canada). Conti	inue effort to pool
		the spatial and spectral advances of both the US and Canada, and develop a high-resolution sensor system capable of characterizing signatures of	high-resolution sensor system capable of characteri	izing signatures of
		rockets and aircraft, for drug interdiction, and identifying trace quantities of a broad spectrum of gases in the einvortiment. Previously funded in PE 06063790F, NATO Cooperative R&D.	t a broad spectrum of gases in the einvornment. Pre	eviously funded in
9	\$0			
9	\$0	AIR FORCE FLIGHT TEST CENTER (AFFTC)		
9	\$29,037	Continue to provide test infrastructure overhead support enabling testing of the B-1B, B-2, B-52, F-16, F-15, F-15E, F-22, F-117, AFTI/F-16, C 17, ATT. ADIA ECCM EM/D 120 141 D AT O 141 E 26 AN/ASO 212 C 120 AT O 172 AT O 224 April 201 E 201 AN/ASO 212 C 120 AT O 172 AT O 224 April 201 E 201 AN/ASO 212 C 120 AT O 172 AT O 224 April 201 E 201 AN/ASO 212 C 120 AT O 172 AT O 224 April 201 E 201 AN/ASO 212 C 120 AT O 172 AT O 224 APRIL 201 E 201 AN/ASO 212 C 120 AT O 172 AT O 224 APRIL 201 E 201 AN/ASO 212 C 120 AT O 172 AT O 224 APRIL 201 E 201 APRIL 201 E 201 AN/ASO 212 C 120 AT O 172 AT O 224 APRIL 201 E 201 APRIL 2	f the B-1B, B-2, B-52, F-16, F-15, F-15E, F-22, F-11	17, AFTI/F-16,
9	\$5,622	Utilities and maintenance and repair for test unique infrastructure; continuing to reduce backlog.	ng to reduce backlog.	
<u> </u>	\$33,505	Contractor Services (in-house contract support activities) increased due to privatization efforts.	privatization efforts.	
5	\$54,320	T&E Civilian Pay (adjusted due to reengineering and privatization efforts)		;
9	\$23,352	Aircraft flying hour costs (to include USAF 1est Filot School) for pilot proficiency for sustained readiness to include programmed depot maintenance, engine overhauls, petroleum, oils and lubricants (POL); and related support; includes POL and DLR increases.	Stude USAF Test Pilot School) for pilot proficiency for sustained readiness to include programm petroleum, oils and lubricants (POL); and related support: includes POL and DLR increases.	med depot
5	80			
3	\$0	AIR ARMAMENT CENTER (AAC)		
9	\$7,543	Continue test infrastructure overhead support for non-nuclear air armaments (AMRAAM, SEEK EAGLE, TMD, JDAM, JSOW, WCMD, etc.);	s (AMRAAM, SEEK EAGLE, TMD, JDAM, JSOV	N, WCMD, etc.);
9	\$3,121	Utilities and maintenance and repair for test unique infrastructure.		
Р	Project 6606TS	Page 9 of 11 Pages	Exhibit R-2A	Exhibit R-2A (PE 0605807F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	SET ITEN	JUSTIFI	CATION	SHEET (I	R-2A Exh	libit)	<u>O</u>	DATE February 2000	y 2000
90 90	BUDGET ACTIVITY 06 - Management and Support	ort			PE NUMBER AND TITLE 0605807F Test a		⊌ਸπ∟E Test and Evaluation Support	on Suppor		PROJECT 6606TS
9	A. Mission Description Continued	par								
99999	FY 2001 (\$ in Thousands) Continued \$20,548 Contractor Servic \$39,717 T&E Civilian Pay \$9,99 Aircraft Support (,	nued r Services (in- lian Pay. upport (Includ	house contract es programmec	Ids) Continued Contractor Services (in-house contract support activities). T&E Civilian Pay. Aircraft Support (Includes programmed depot maintenance Total	ties). nance; engine o	vverhauls; petr	oleum, oils an	d lubricants (P	 Ids) Continued Contractor Services (in-house contract support activities). T&E Civilian Pay. Aircraft Support (Includes programmed depot maintenance; engine overhauls; petroleum, oils and lubricants (POL); and related support). 	upport).
9	B. Project Change Summary (U) Significant Program Change: None	None								
<u> </u>	C. Other Program Funding Summary (\$ in Thousands) EX 1999 EY 2000 Actual Estimate	nmary (\$ in T FY 1999 Actual	housands) FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
99	Not Applicable Related RDT&E:									
(3)		40,117	46,038	55,326	47,804	45,781	54,088	65,937		TBD
9	modernization) PE 0604256F, Threat Simulator Develonment	22,656	25,175	26,115	26,328	27,816	30,636	31,059		TBD
<u> </u>	PE 0604940D, Central Test & Evaluation Improvement Program (T&E) (investments for new tri-service test capabilities). Service programs compete for CTEIP funds on a yearly basis. FY2001 through FY2005 are To Be Determined.	28,928	34,530							TBD
	Project 6606TS			Page	Page 10 of 11 Pages				Exhibit R-2A (PE 0605807F)	E 0605807F)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	EET (R-2A Exhibit)	TE February 2000
ВИDGET АСТІVІТУ 06 - Management and Support	PE NUMBER AND TITLE 0605807F Test and Evaluation Support	PROJECT 6606TS
(U) E. Schedule Profile		
FY 1999 1 2 3 4 1 (U) N/A Most T&E test infrastructure overhead requirements are continuous and are not driven by discrete start/end dates.	$\begin{array}{ccccc} \hline \text{FY 1999} & \hline \text{FY 2000} \\ 2 & 3 & 4 & 1 & 2 & 3 & 4 \\ \hline \text{iven by discrete start/end dates.} \end{array}$	FY 2001 1 2 3 4
Project 6606TS Pages 11 of 11 Pages		Exhibit R-2A (PE 0605807F)

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PROJECT ACTIVATY PROJECT ACTIVATY PROJECT PROJEC		RDT&E BUDGET ITEM JU	USTIFIC	ATION	JSTIFICATION SHEET (R-2 Exhibit)	(R-2 Ex	chibit)		DATE	Februa	February 2000	
Coart (\$ in Thousands) 13.908 FY 2000	90 - 90	RET ACTIVITY Management and Support			PE NUMBER 0605808	R AND TITLE	opment I	Planning			PROJECT 663361	_
Guarnity of ROTASE Articles Guarnity of ROTASE Articles E terminated E terminated This Program Beneart (PE) supports the Air Force Modernization Planning Process (MPP), which receives front-end guidance from Air Force Strategic Planning. Consistent with DoS 5000 series described the Renables rigorous identification and instantiation planning efforts each endeged carolidate of currently assigned or fluture Air Force roles and missis as sessoriated mygation plans. Such modernization planning efforts each endeged carolidate plans. Series and such address and needed capability controllar plans. Such modernization planning efforts each endeged according to flute planses. First, a 'strategies-to-last', Mission Atea Assessment (MAA) is conducted to identify operational tasks. These operational tasks must relate directly to currently assigned or fluture Air Force roles and missis as developed from number of sources including the Air Force Vision and Strategie Plan. Scoond, a Mission Noted Airal Science MAA) is conducted to assess current an operational tasks and tulimately identify specific deficiencies and meeded. The flutly planse of the MPP is Mission Solution Analysis (MRSA), which identifies against operational tasks and tulimately identify specific deficiencies and meeded. The flutly planse of the MPP is Mission Solution Analysis (MRSA), which identify technology needs for finure non-lethal Suppression of Enemy Air Defenses (SEAD) Malysis (MSA), which identifies against operational concepts and identify technology needs for finure non-lethal Suppression of Enemy Air Defenses (SEAD) Minitated effort to analyze camping and planned wealther and collection sensors, and identify the most effective strategy to support warfight Initiated effort to improve combet Forces Assessment Model of circle evaluation of SEAD efficiences against integrated mission solution analysis, including camping level analyses, for future long-range contentional strike and upgate of detailed camping camping evaluations of SEAD efficienc		COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost	•
E terminated A.Mission Description This Program Element (PE) supports the Air Force Modernization Planning Process (MPP), which receives front-end guidance from Air Force Strategic Planning. This Program Element (PE) supports the Air Force Modernization planning efforts can be categorized according to three phases. First, a strategic-to-class, Mission Area Assessment (MAA) is conducted to identify operational tasks. These operational tasks must relate directly to currently assigned or future Air Force folse and missions as derived from a number of sources including the Air Force Vision and Strategic Plan. Sociol, a Mission Meds Analysis (MNA) is conducted to identify operational tasks and ultimately identify specified officiencies and needs. The third phase of the MP is Nission Solution Analysis (NNA), which identifies potential cost effective, non-materiel (i.e. doctrine, training) and materiel alternatives that address the deficiencies/needs, or simply represent new organizational, operational, and/or technological opportunities. EV 1999 (S. in Thousands) Analyzed operational concepts and identify rechnology needs for future non-lethal Suppression of Enemy Air Defenses (SEAD) Initiated effort to assess AF Special Operations Porces (SOP) Aircraft multi-specieral survivability for various SOF mission areas Sydo Conducted effort to analyze campaign and mission-level space fore deficiency/epablity through uses and upgrade of detailed campaign models Air Defenses Sydo Initiated effort to analyze campaign and mission-level space fore deficiency/epablity through the most effective strategy to support warfighter Sydo Initiated effort to analyze campaign and mission-level space fore deficiency/epablity through a strategy to support variance and protein and programe of the strategy to support variance and protein and space capabilities of existing and planned weather data collection sensors, and identify the most effective strategy to support variance and protein and protein and protein and processes the military uti	96838		3,908	0	0	0	0	0	0	3,908	3,908	
E C C C C C C C C C C C C C C C C C C C		Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	
<u> </u>	* PE	terminated										_
<u> </u>	<u> </u>	A. Mission Description This Program Element (PE) supports the Air Force M Consistent with DoD 5000 series direction, the PE en	fodernizatior ables rigoro	1 Planning P us identifica	Process (MPI	P), which rec	seives front⊣ f current/fut	end guidanc ure operatio	e from Air F nal deficien	orce Strateg	ic Planning. Jed capability, as	
Analysis (MSA), which simply represent new c EY 1999 (\$ in Thousar \$443 \$470 \$579 \$5241 \$700 \$646 \$3,908		well as associated migration plans. Such modernizati Assessment (MAA) is conducted to identify operation as derived from a number of sources including the Air programmed force capabilities against operational task	ion planning nal tasks. Ti ir Force Visi	efforts can hese operation on and Strate	be categoriz onal tasks m egic Plan. S fy specific de	ed according ust relate dir second, a Mir eficiencies a	to three phi ectly to curr ssion Needs nd needs. T	ases. First, a ently assign Analysis (M	a 'strategies-led or future (INA) is concase of the MF	to-task', Miss Air Force ro ducted to ass	sion Area les and missions ess current and 1 Solution	
FY 1999 (\$ in Thousar \$443 \$470 \$579 \$240 \$241 \$700 \$646 \$3,908		Analysis (MSA), which identifies potential cost effectimply represent new organizational, operational, and	tive, non-ma Vor technolo	ateriel (i.e. d gical opport	loctrine, tact tunities.	ics, training)	and materie	alternative	s that addres	ss the deficie	ncies/needs, or	
	<u> </u>	Thousar	s and identifical Operations of Mass impaign and tisting and plubat Forces. ysis, includii implement a	y technology ons Forces (5 Destruction mission-lev lanned weath Assessment ng campaign common ar	y needs for fi (SOF) Aircra n on air mob rel space forc her data collu Model for d n level analy: nalytical fran	uture non-let aft multi-spe illity operatic ce deficiency ection sensoi irrect evaluat ses, for futur nework and	thal Suppres ctral surviva ons in contin //capability t rs, and ident ion of SEAI re long-range tool set to as	sion of Ener bility for va gencies hrough use; ify the most O effectiven e convention ssess the mil	ny Air Deferrious SOF nrand upgrade effective stress against hal strike aircitary utility (nses (SEAD) nission areas of detailed categy to sup ntegrated Air craft of air and sp	ampaign models port warfighter r Defenses ace capabilities	

	RDT&E BUDGET ITEM JUSTIFICATI	STIFICATION SHEET (R-2 Exhibit)	it)	DATE Febr u	February 2000
90	BUDGET ACTIVITY 06 - Management and Support	PE NUMBER AND TITLE 0605808F Developm	4D ТITLE Development Planning		PROJECT 663361
(C)	A. Mission Description Continued				
999	FY 2000 (\$ in Thousands) \$0 No Activity \$0 Total * no appropriation				
999	FY 2001 (\$\hat{\$}\) in Thousands) \$0 \$0 No Activity \$0 Total * PE terminated				
ව	B. Budget Activity Justification This program is in budget activity 6, Management Support, because supported studies and analyses provide inputs for Air Force Mission Area and/or Support Plans and future Air Force investment decisions. However, Phase 0 concepts studies and Analysis of Alternatives (AOAs) are not normally conducted in this program element	ported studies and analyses provide ies and Analysis of Alternatives (A!	inputs for Air Ford OAs) are not norm:	ce Mission Area and/c ally conducted in this	or Support Plans and program element
3	C. Program Change Summary (\$ in Thousands)				
9	Previous President's Budget (FY 2000 PBR)	FY 1999 4,053	FY 2000 5,696	EY 2001 5,751	Total Cost
3	Appropriated Value	4,075	0	`	
9	Adjustments to Appropriated Value a. Congressional/General Reductions b. Small Business Innovative Research c. Omnibus or Other Above Threshold Reprogram	-22 -123			
	d. Below Threshold Reprogram e. Rescissions f Other	-22			
99	Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR	3,908	0	-5,751 0	
<u>3</u>	Significant Program Changes: FY00-no appropriation Out years-PE terminated				
<u>a</u>	Project 663361	Page 2 of 3 Pages		Exhibit R-	Exhibit R-2 (PE 0605808F)

	RDT&E BUDGET ITEM JU		STIFICATION SHEET (R-2 Exhibit)	SHEET	(R-2 Ext	libit)		DATE F	February 2000	2000
90 00	BUDGET ACTIVITY 06 - Management and Support			PE NUMBER AN 0605808F	PE NUMBER AND TITLE 0605808F Develo	ы тіт∟е Development Planning	ning			РRОЈЕСТ 663361
<u>(</u>	D. Other Program Funding Summary (\$ in Thousands) FY 1992 FY 2000 Actual Estimate	housands) EY 2000 Estimate	EX 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate		Cost to	Total Cost
9	(U) None									
9	E. Acquisition Strategy Annually (in February), an Air Force-wide corporate board reviews, prioritizes, and screens proposed studies to definitize the program, ensuring relevance and no unnecessary duplication of effort.	orate board rev	riews, prioritiz	es, and screen	s proposed st	ıdies to definiti	ze the prog	am, ensurin	g relevance	and no
9	F. Schedule Profile			FY 1999	_	呂	FY 2000		FY 2001	1 0
Œ	(II) Evenite projects		1	7	3 4	1 2	m	4	7	3 4
3	- Conops and Technology for Future Non-lethal SEAD	I SEAD		×		×	×	×		
9	- SOF Aircraft Multi-spectral Survivability									
38	 WMD Impact on Air Mobility Ops Upgrade/use Detailed Campaign Model for Space Force Deficiency 	vace Force Del	Toiency	× ×	× × × ×	× ×				
,	Analysis		•							
9	- Weather Data Collection Study				×					
9	- Improve Combat Forces Assessment Model	ď.		× ′		×				
96	- Future Long-Kange Conventional Strike Aircraft	rait								
≘	 Common Analytical Framework for Air and Space Capability Completed Event - Task Initiation 	pace Capabili	Υ Σ	×						
	Project 663361		Pag	Page 3 of 3 Pages				Exhik	Exhibit R-2 (PE 0605808F)	0605808F)

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	RDT&E BUDGET ITEM JU	JSTIFIC	ATION	JSTIFICATION SHEET (R-2 Exhibit)	(R-2 E)	chibit)		DATE	ł	February 2000
- 90	вирсет аститу 06 - Management and Support			PE NUMBER AN 0605854F		ID TITLE Pollution Prevention	ention			PROJECT 661007
	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
661007	7 Pollution Prevention	4,956	2,498	0	0	0	0	0	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0
All fi	All funds were transferred from PE 65854F, Budget Activity to reflect the primary purpose of the funding profile.	١.	ment & Sup	oport) to PE	63859F, Bu	dget Activity	74 (Demons	tration and	Validation) b	6 (Management & Support) to PE 63859F, Budget Activity 4 (Demonstration and Validation) beginning in FY01
Ð	A. Mission Description Beginning in FY99, all funds for Test Facility base operations support (RDT&E) were transferred to operations and maintenance. Remaining RDT&E funds were for development and test efforts to validate and qualify environmentally acceptable materials and processes to replace existing common hazardous materials and processes, cross-cutting weapons systems pollution prevention tools, and management and support costs in direct support of development efforts to meet compliance problems.	perations sur nvironmenta ools, and ma	port (RDT & lly acceptab nagement a	&E) were tra sle materials nd support c	nsferred to c and process osts in direc	pperations ar es to replace t support of	id maintenai existing co developmen	nce. Remain mmon hazar t efforts to r	ning RDT&E cdous materia neet complia	funds were for ils and processes, nce problems.
	FY00 funds target efforts that demonstrate and validate alternate aircraft painting/depainting, maintenance processes which reduce the compliance burden associated with National Emissions Standard for Hazardous Air Pollutants (NESHAP), Clean Air Act and other environmental requirements. Specifically, funds will target pollution prevention technologies, including replacement of chromate conversion coating on aluminum and magnesium based metals, nonchromated primers to replace zinc chromate, and environmentally safe replacement for cadmium plating.	ate alternate aircraft p Pollutants (NESHAP) tent of chromate conv for cadmium plating.	aircraft pain VESHAP), C nate convers n plating.	nting/depaint Clean Air Ac sion coating	ing, mainter t and other on aluminu	nance proces environment m and magne	ses which re al requireme esium based	educe the co ents. Specif metals, non	ite alternate aircraft painting/depainting, maintenance processes which reduce the compliance burden associ Pollutants (NESHAP), Clean Air Act and other environmental requirements. Specifically, funds will target ent of chromate conversion coating on aluminum and magnesium based metals, nonchromated primers to refor cadmium plating.	den associated will target rimers to replace
<u> </u>	FY 1999 (\$\frac{\pi}{\pi} \text{in Thousands}) \$294 Resource Conservation and Recovery Act (RCRA) Subtitle C - Hazardous Waste Resource Conservation and Recovery Act (RCRA) Subtitle D - Solid Waste Clean Air Act \$100 Clean Water Act Clean Water Act Hazardous Material Reduction \$223 Other \$3,349 Dem/Val of Advanced Low Pollution Coating Technologies Total	covery Act (covery Act (lintion Coat	(RCRA) Sut	btitle C - Ha	zardous Wasid Waste	ste				
ď	Project 661007		Page	Page 1 of 3 Pages					Exhibit R-2 (Exhibit R-2 (PE 0605854F)

	RDT&E BUDGET ITEM JUSTIFICA	STIFICATION SHEET (R-2 Exhibit)	it)	DATE February 2000	000
90 00	BUDGET ACTIVITY 06 - Management and Support	PE NUMBER AND TITLE 0605854F Pollution Prevention	Prevention		PROJECT 661007
3	A. Mission Description Continued				
3	000 (\$ in Thousar				
9	\$505 Resource Conservation and Recovery Act (RCRA) Subtitle C - Hazardous Waste	covery Act (RCRA) Subtitle C - Hazardous Waste			
3 (Resource Conservation and Rec Clean Air Act	J.C.A.) Subtitle D - Solid Waste			
3					
9					
99	\$210 Other \$2,498 Total				
ď.	FV 2001 (& in Thomsands)				
999	\$0 No Activity \$0 Total				
9	BA) 6, Manageme nning in FY99, al' nplete and all rem	ent and Support, because the majority of funding is directed toward support of test facilities required for general I O&M funds for test facility operations were transferred to O&M accounts. Action to change to BA 4, naining funds in this account were transferred to PE 63859F in FY01, as they are primarily for RDT&E Dem/Val	ected toward supported to O&M accoun 1859F in FY01, as tl	rt of test facilities required fo ts. Action to change to BA 4 hey are primarily for RDT&E	for general 4, E Dem/Val
=	Of Program Change Summary (\$ in Thousands)				
		FY 1999	FY 2000	FY 2001	Total Cost
9	Previous President's Budget (FY 2000 PBR)	5,144	2,553		
56	Appropriated Value A dinstments to Appropriated Value	5,173	2,553		
)	a. Congressional/General Reductions	-29	7		
	b. Small Business Innovative Research	-160			
	c. Omnibus or Other Above Threshold Reprogram		-38		
	d. Below Threshold Reprogram	1	,		
	e. Kescissions	-28	-16		
3	 Utner Adjustments to Budget Years Since FY 2000 PBR 		0		
	Project 661007	Page 2 of 3 Pages		Exhibit R-2 (PE 0605854F))605854F)

	RDT&E BUDGET ITEM JU	JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET	R-2 Exhi	lbit)	DATE	πE February 2000	y 2000
90 90	BUDGET ACTIVITY 06 - Management and Support		PE NUMBER AND TITLE 0605854F Pollui	AND TITLE Pollutio	4D ТІТLE Pollution Prevention	on		PROJECT 661007
<u>e</u>	C. Program Change Summary (\$ in Thousands) C	() Continued		EV 1000	000C AH		EV 2001	F
9	Current Budget Submit/FY 2001 PBR			4,956	2,498		7007	TBD
9	Significant Program Changes:							
9	D. Other Program Funding Summary (\$ in Tho FY 1999 J	EY 2000 FY 2001 Ectimate Ectimate	FY 2002 Estimate	FY 2003	FY 2004	FY 2005	Cost to	Total Cost
99	AF RDT&E Other APPN Not Applicable				Pallilar	T Stilling	Piero	TBD
3	E. Acquisition Strategy Not applicable							
9	F. Schedule Profile		0001 232		į		Š	
		1	FY 1999 2 3	4	$\begin{array}{ccc} & \text{FY 2000} \\ 1 & 2 & 3 \end{array}$	3 3 4	1 2 E	FY 2001 2 3 4
555	Contract Award of ALPCT Efforts Prototype Development Demonstration/Validation			*	×	×		
<u> </u>					!	×		
	Project 661007	Ps	Page 3 of 3 Pages				Exhibit R-2 (PE 0605854F)	E 0605854F)

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	RDT8	RDT&E BUDGET ITEM JU	_	ATION	STIFICATION SHEET (R-2 Exhibit)	(R-2 Ex	(hibit)		DATE	February 2000	v 2000
90 - 90	BUDGET ACTIVITY 06 - Management and Support	Support			PE NUMBER AN	PE NUMBER AND TITLE	Sveten	oute I su	h Progr	ID TITLE Rocket Systems I allnch Program (RSI P)	PROJECT 661023
	COST (\$ i	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete]
661023		Rocket System Launch Program (RSLP)	14,235	7,732	906'2	8,015	8,158	8,321	8,486	Continuing	TBD
	Quantity of RDT&E Articles	Articles	0	0	0	0	0	0	0	0	0
9	A. Mission Description Rocket System Launch Progragovernment agencies using eximtegration, launch support, bo launch or program are paid by Minuteman II by providing sto research and development use.	A. Mission Description Rocket System Launch Program (RSLP) is tasked to provide Research, Development, Test and Evaluation (RDT&E) launch vehicle support to DoD and other government agencies using excess ballistic missiles assets. RSLP mission was established by the Secretary of Defense in 1972. It provides mission planning, payload integration, launch support, booster storage and disposal, maintenance and logistics support for selected DoD RDT&E launches. Costs directly attributable to a specific launch or program are paid by the user (Air Force, Navy, Army, Ballistic Missile Defense Organization (BMDO), etc.). RSLP directly supports deactivation of Minuteman II by providing storage of these and other assets. RSLP performs research and development support operations required for general rocket system launch research and development use.	provide Rese ssets. RSLP sal, mainten ivy, Army, B assets. RSI	earch, Devel mission wa ance and log allistic Mis	lopment, Tes is established gistics suppo isile Defense research an	st and Evalus by the Sec rt for selecte Organizatic	ation (RDT& retary of Del ed DoD RDJ on (BMDO), ent support o	EE) launch vense in 197 (&E launch etc.). RSL) perations re	vehicle supp 2. It provid es. Costs dii P directly su quired for g	ort to DoD an es mission pla rectly attribute pports deactiv eneral rocket :	d other ming, payload able to a specific ation of system launch
999	FY 1999 (\$ in Thousands) \$6,023 Cor \$1,649 Cor	Continued storage and refurbishment of deactivated Minuternan and other missile flight test assets. Continued to perform aging surveillance-related activities on stored motors; continued to perform analyses/studies to identify and evaluate	thment of degree in the control of t	activated M lated activit	inuteman an ties on storec	d other miss I motors; co	ile flight tes ntinued to pe	t assets. erform analy	/ses/studies	to identify and	i evaluate
999	\$6,563 \$0 \$14,235	potential satety-related issues affecting stored inotors. Performed Advanced Solid Axial Stage (ASAS) development and related activities. Continued to provide launch assets and technical assistance for DoD RDT&E launches. (Funded by users.) Total	ial Stage (A)	SAS) develo	opment and i	related activ	ities. aunches. (F	unded by us	ers.)		
£££ ££	FY 2000 (\$ in Thousands) \$6,157 Cor \$1,575 Cor pot \$0 \$7,732 Tot	ontinue storage and refurbishment of deactivated Minuteman and other missile flight test assets. Continue performing aging surveillance-related activities on stored motors; continue performing analyses/studies to identify and evaluate potential safety-related issues affecting stored motors. Continue providing launch assets and technical assistance for DoD RDT&E launches. (Funded by users.) Total	ument of dead veillance-rel affecting stor ets and techn	ctivated Mir ated activiti ed motors. iical assistar	nuteman and ies on stored nce for DoD	other missil motors; cor RDT&E lav	e flight test ntinue perfor nnches. (Fur	assets. ming analys ided by user	ses/studies to	o identify and	evaluate
<u>α</u>	Project 661023			Page	Page 1 of 3 Pages	δ				Exhibit R-2 (F	Exhibit R-2 (PE 0605860F)

	RDT&E BUDGET ITEM JUSTIFICATION	STIFICATION SHEET (R-2 Exhibit)	t)	DATE February 2000	2000
90 ana	вирсет астилту 06 - Management and Support	PENUMBER AND TITLE 0605860F Rocket Systems Launch Program (RSLP)	stems Launch P	rogram (RSLP)	PROJECT 661023
<u>e</u>	A. Mission Description Continued			,	
333	EY 2001 (\$ in Thousands) \$6,228 Continue storage and refurbishment of deactivated Minuteman and other missile flight test assets. \$1,678 Continue performing aging surveillance-related activities on stored motors; continue performing analyses/studies to identify and evaluate	nuteman and other missile flight ies on stored motors; continue p	t test assets. erforming analyses/st	udies to identify and ev	aluate
99	potential safety-related issues affecting stored motors. \$0 Continue providing launch assets and technical assistance for DoD RDT&E launches. (Funded by users.) \$7,906 Total	nce for DoD RDT&E launches.	(Funded by users.)		
9	B. Budget Activity Justification This program is in Budget Activity 6 - Management and Support because RSLP provides research and development effort and/or operations support for general research and development use.	LP provides research and develc	opment effort and/or o	perations support for ge	eneral research
9	C. Program Change Summary (\$ in Thousands)				
		FY 1999		FY 2001	Total Cost
5	Previous President's Budget (FY 2000 PBR)	14,496	7,913	7,976	TBD
9	Appropriated Value	14,865	7,913		
9	Adjustments to Appropriated Value		-		
	 a. Congressional/General reductions b. Small Business Innovative Research 	-369 -118	Ţ		
	c. Omnibus or Other Above Threshold Reprogram		-119		
	d. Below Threshold Reprogram	-63			
	e. Rescissions f Other	08-	-61		
9	Adjustments to Budget Years Since FY 2000 PBR			-70	
9	Current Budget Submit/FY 2001 PBR	14,235	7,732	7,906	TBD
<u>(</u>	Significant Program Changes: Due to scheduling conflicts, the two Advanced Solid Axial Stage (ASAS) experiments have been delayed until 2nd and 3rd Qtr FY00 respectively; however as these are piggyback experiments, no additional costs above those already budgeted will be incurred. No other changes to either content or cost. FY01 adjustment funded higher Air Force priorities.	periments have been delayed un	til 2nd and 3rd Qtr FY s to either content or c	700 respectively; howev ost. FY01 adjustment f	rer as these are unded higher
Δ,	Project 661023 Page	Page 2 of 3 Pages		Exhibit R-2 (PE 0605860F)	0605860F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	3ET ITE	M JUSTIF	-ICATION	SHEET	(R-2 Exh	ibit)	DA	DATE February 2000	, 2000
B 100 100 100 100 100 100 100 100 100 10	вирсет астилту 06 - Management and Support	ļ,			PE NUMBER AND TITLE 0605860F ROCK	AND TITLE F Rocket	Systems L	aunch Pro	ютпсе Rocket Systems Launch Program (RSLP)	PROJECT 661023
(2)	D. Other Program Funding Sum	mary (\$ in T FY 1999 Actual	Thousands) EY 2000 Ferimate	FY 2001 Ferimate	EX 2002 Fertimate		FY 2004 Estimate	FY 2005 Estimate	Cost to	Total Cost
9	None	inna A		Annua Ca		A	Appropria	A THE STATE OF THE	A TOTAL	
9	E. Acquisition Strategy Not Applicable.									
9	F. Schedule Profile									
				_	FY 1999 2 3	4	EY 2000	2000 3 4	1 2 EY2	FY 2001 2 3 4
<u> </u>	Storage/Refurbishment (On-Going) Aging Surveillance (On-Going) Flight Tests (ait Project) ASAS Experiments (2 planned) * - Completed Event X - Planned Event			*			· ×			
	Project 661023			Pag	Page 3 of 3 Pages				Exhibit R-2 (PE 0605860F)	E 0605860F)

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RDT&E BUDGET ITEM JU	JSTIFIC	ATION	STIFICATION SHEET (R-2 Exhibit)	(R-2 Ex	hibit)	:	DATE	February 2000	y 2000
BUDGET ACTIVITY 06 - Management and Support			PE NUMBER 0605864	PE NUMBER AND TITLE O605864F Space	PE NUMBER AND TITLE O605864F Space Test Program	ogram			РВОЈЕСТ 662617
COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
662617 Free-Flyer Spacecraft Missions	40,397	50,402	46,476	50,576	53,683	54,254	55,827	55,827 Continuing	0
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

(U) A. Mission Description

- experiments with military relevance whose scope ranges from basic research to advanced development. STP missions are the most cost effective way to flight test new (U) The Space Test Program (STP) conducts space test missions to fly the maximum number of DoD experiments consistent with priority, opportunity, and funding. STP supports the DoD space research community by centrally financing acquisition of a host satellite or launch vehicle, the launch, and initial operations costs for space systems technologies, concepts and designs, providing an inexpensive way to:
- -Demonstrate the feasibility of new space systems and technologies
- -Improve operational design by characterizing the space environment, event, or sensor physics proposed for an operational system/system upgrade
 - -Provide early operational capabilities to evaluate usefulness or quickly react to new developments
 - -Perform operational risk reduction through direct flight test of prototype components
- -Develop the knowledge base from which to plan new and improved operational systems and system upgrades
 - -Develop and test advanced small launch vehicle technology and capabilities

capability. Such a redundancy would result in the loss of the contractual economy of scale that a single space test organization provides, as well as the filtering function opportunity' space hardware, including operational spacecraft, where margin is usually firmly identified during the later stages of spacecraft development. This assures space environments. The Secretary of Defense issued a policy statement in November 1995 reaffirming STP's role as the primary provider of spaceflight for the entire funding would force each of the Services and DoD agencies to create individual launch capabilities in an attempt to duplicate STP's current low-cost, risk-mitigating (U) This DoD program provides the primary spaceflight capability to perform fly-before-buy, risk-reducing demonstrations of advanced technologies in operational DoD space research community. The Air Force requires a stable funding level and the flexibility necessary to take advantage of whatever means of spaceflight is that the greatest amount of DoD space research is accomplished with the limited funds available. This funding provides DoD's most successful and cost-effective capability to launch and test new technologies prior to their incorporation into our nation's very expensive and demanding operational space systems. Insufficient deemed to be most cost effective for a given experiment or complement of experiments. This flexibility is essential to take advantage of inexpensive 'target of of the DoD Space Experiments Review Board in assuring quality experiments and minimum duplication.

Project 662617

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Exhibit R-2 (PE 0605864F)

	RDT&E	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2000
- 90 Sana	BUDGET ACTIVITY 06 - Management and Support		PE NUMBER AND TITLE 0605864F Space Test Program	PROJECT 662617
(J)	A. Mission Description Continued	Continued		
555	(\$ in Thousar	Piggyback/secondary payload missions, mission planning, Aerospace Corp support, mission and program support Space Shuttle payload engineering, analysis, pre- and post-launch processing, and launch support	orp support, mission and program supposing, and launch support	ti :
9 9	\$12,857 Initity (\$15,857) Initity (\$16,501) Con	Initiated experiment missions from 1998 Space Experiments Review Board (SERB) list - MightySat II.1, Coriolis, reusable upper stage/bus development Continued current missions - Tri-Service Space Experiment 5 (TSX-5), Multi-spectral Thermal Imager (MTI), and Advanced Research and Clobal Observation Satellite (ABGOS) launch/marations	ard (SEKB) list - MightySat II. I, Corio Multi-spectral Thermal Imager (MTI), a	lis, reusable upper stage/bus and Advanced Research and
<u>(</u>	\$40,397 Total	tal		
999999	FY 2000 (\$ in Thousands) \$13,305 Piggy \$3,150 Space \$5,346 Initia \$28,601 Conti	Piggyback/secondary payload missions, mission planning, Aerospace Corp support, mission and program support Space Shuttle payload engineering, analysis, pre- and post-launch processing, and launch support Initiate experiment missions from 1999 SERB list, such as Communication/Navigation Outage Forecasting System (C/NOFS) Continue current missions - Coriolis, launch MTI, operations for ARGOS, launch/operations for TSX-5, MightySat II.1 Total	orp support, mission and program supporsing, and launch support on/Navigation Outage Forecasting Sys S, launch/operations for TSX-5, Mighty	ort tem (C/NOFS) ySat II.1
££££	(\$ in Thousar	Piggyback/secondary payload missions, mission planning, Aerospace Corp support, mission and program support Space Shuttle payload engineering, analysis, pre- and post-launch processing, and launch support Initiate experiment missions from 1999 and 2000 SERB lists, such as Super Transmission/Remote Atmospheric Ionospheric Detection System Integrated Polar Experiment (STRIPE) and Coronal Mass Ejection Warning System (CMEWS) Continue current missions - C/NOFS; operations for TSX-5 and MightySat II.1	orp support, mission and program suppossing, and launch support per Transmission/Remote Atmospheric ing System (CMEWS)	ort : Ionospheric Detection System
<u> </u>	\$46,476 Total Note: New missions and fur	10tal Note: New missions and funding priorities evolve as spaceflight opportunities, budget, and DoD experiment rankings change.	D experiment rankings change.	
<u> </u>	B. Budget Activity Justification STP is in Budget Activity 6, RDT	B. Budget Activity Justification STP is in Budget Activity 6, RDT&E Management and Support, because it supports RDT&E satellite launches.	stellite launches.	
ď	Project 662617	Page 2 of 5 Pages		Exhibit R-2 (PE 0605864F)

	RDT&E BUDGET ITEM JU		TION	SHEET (STIFICATION SHEET (R-2 Exhibit)	bit)		DATE Februa	February 2000
90 90	BUDGET ACTIVITY 06 - Management and Support			PE NUMBER AND TITLE 0605864F Space	ND TITLE Space	Test Program] E		PROJECT 662617
Ð	C. Program Change Summary (\$ in Thousands)	(<u>s</u> i			FV 1999	FV 2000		FV 2001	Total Cost
Ð:	Previous President's Budget (FY 2000 PBR)				45,439	51,658	4	49,389	TOTAL PROPERTY.
33	Appropriated Value Adjustments to Appropriated Value				45,933	51,658	×		
,	a. Congressional/General Reductions				494	-81	_		
	 b. Small Business Innovative Research c. Omnibus or Other Above Threshold Reprogram 	E			-1,399	-772	2		
	d. Below Threshold Reprogram e. Rescissions				-3,417 -226	403	~		
99	f. Other Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR	સ			40,397	50,402		-2,913 46,476	
5	Significant Program Changes: Space Test Program (Space) is funded in PE 06058641	15864F starting in F	Y99. Pric	or year funding	g is in PE 060	3402F. FY01	reductions su	F starting in FY99. Prior year funding is in PE 0603402F. FY01 reductions support higher AF priorities.	riorities.
9	D. Other Program Funding Summary (\$ in Thousands) EX 1999 EX 2000 Actual Estimate		EY 2001 Estimate	<u>FY 2002</u> Estimate	FY 2003 Estimate	EY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
99	Related Procurement: PE 0305119F, Medium Launch Vehicles								
9	PE 0305144F, Titan Space Boosters								
<u>(5)</u>	PE 0305953F, Evolved Expendable Launch Vehicle				75,000				
	Experiments are funded by many Science and Technology (S&T) PEs in Air Force, Army, Navy, DARPA, BMDO, DoE, NASA, and other programs.	chnology (S&T) PE	is in Air F	'orce, Army, l	√avy, DARP	, BMDO, Dol	E, NASA, an	d other programs.	
۵	Project 662617		Page	Page 3 of 5 Pages				Exhibit R-2 (Exhibit R-2 (PE 0605864F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2000
90 108	вирсет аститту 06 - Management and Support	PE NUMBER AND TITLE 0605864F Space Test Program	PROJECT 662617
ઈ	E. Acquisition Strategy Various service laboratories and DoD agencies justify, develop, finance, and deliver the space research experiments supported by STP. These experiments have a common goal to improve DoD's current and future operational space systems' performance. The DoD Space Experiments Review Board (SERB), an independent board composed of Air Force, Army, Navy, Joint Staff, NRO, BMDO, and other representatives, annually prioritizes experiments for spaceflight. The SERB gives the prioritized list of experiments to STP, which then seeks out the most cost-effective means of spaceflight to maximize the number of experiments flown within the constraints of priority, opportunity and available funding. The most common spaceflight opportunities include piggybacking on military or commercial satellites and using the various payload modes of the Space Shuttle and International Space Station. For experiments with requirements that cannot be satisfied with these 'secondary' opportunities, STP procures dedicated spacecraft and launch vehicle hardware within the constraints of available funding and according to experiments. These include small and medium satellite busses, as well as small launch vehicle-class boosters (such as Pegasus XL, Taurus, and Athena). Medium launch vehicle-class boosters from PE 35119F (MLV), PE 35144F (Titan), and PE 35953F (EELV) provide medium launch as required. If a service fails to adequately fund a particular experiment, if STP deems the experiment impractical to fly, or if the appropriate spaceflight opportunity becomes unavailable, STP shifts remaining resources to provide spaceflight support for the next highest priority experiment.	develop, finance, and deliver the space research experiments supported by STP. These experiments have ational space systems' performance. The DoD Space Experiments Review Board (SERB), an independent BMDO, and other representatives, annually prioritizes experiments for spaceflight. The SERB gives the out the most cost-effective means of spaceflight to maximize the number of experiments flown within the g. The most common spaceflight opportunities include piggybacking on military or commercial satellites and International Space Station. For experiments with requirements that cannot be satisfied with these 'sec unch vehicle hardware within the constraints of available funding and according to experiment requireme II as small launch vehicle-class boosters (such as Pegasus XL, Taurus, and Athena). Medium launch vehicle PELV) provide medium launch as required. If a service fails to adequately fund a particular, or if the appropriate spaceflight opportunity becomes unavailable, STP shifts remaining resources to lent.	P. These experiments have a ard (SERB), an independent board flight. The SERB gives the experiments flown within the tary or commercial satellites and t be satisfied with these 'secondary' ng to experiment requirements. hena). Medium launch vehicle-class to adequately fund a particular hifts remaining resources to provide
9	F. Schedule Profile E. Schedule Profile E. Schedule Profile	FY 1999 FY 2000	FY 2001
99	STS-88 - MightySat 1, SIMPLEX STS-95 CRYOTSU, MSX, MEMS, CCM-A, PANSAT, SIMPLEX, * TASBE	1	1
<u> </u>	ARGOS(DeltaII)-ESEX,USA,GIMI,CERTO,SPADUS,HIRAAS, HTSSE,EUVIP,CIV (P91-1) STS-93 STI -B CCM-C MSX LESAH SIMPLEX MEMS	*	
<u> </u>	POGS-II (DMSP-15) (S92-1) CHAWS-LD (OSP) (S99-2)	*	
96	CEASE, CERTO PLUS (STRV1 C/D) (S97-1, S97-2) MITHYES, Tannel (1997-3)	× >	
39	TSX-5 (Pegasus XL)-STRV II, CEASE (P95-2)		
<u> </u>	SINDRI/MightySat II.1 (OSP) (P99-1) STS-100** (ISS-6A) MACE PICOSat (TBD LV)- PBEX, IOX, CERTO, OPPEX (P97-1) STS-107** ACSBIRS, STW/AR, CCM-C	×	××
	Project 662617 Page 4 of 5 Pages	5 Pages	Exhibit R-2 (PE 0605864F)

RDT&E BUDGET ITEM JUSTIFICATION	STIFICATION SHEET (R-2 Exhibit)	DATE February 2000
BUDGET ACTIVITY 06 - Management and Support	PE NUMBER AND TITLE 0605864F Space Test Program	PROJECT 662617
(U) F. Schedule Profile Continued	EY 1999 EY 2000	EY 2001
(U) STS-109** (ISS UF-2) MEMS-ER (U) Coriolis (Titan II) (P98-2) 10FY02 (U) CNOFS (TBD LV) (P00-a) 20FY03 (U) *= completed event (U) **New spaceflight opportunity since FY00PB (U) X = planned launch (U) X = planned launch		o ×
Project 662617	Page 5 of 5 Pages	Exhibit R-2 (PE 0605864F)

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	RDT	RDT&E BUDGET ITEM JU		ATION	STIFICATION SHEET (R-2 Exhibit)	(R-2 Ex	hibit)		DATE	February 2000	y 2000
90 - 90	вирсет астилту 06 - Management and Support	ind Support			PE NUMBEF 1001004	PE NUMBER AND TITLE 1001004F International Activities	ational A	\ctivities			PROJECT 664645
	COST (\$	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
664645		International Cooperative Research & Development	3,543	3,660	3,773	3,825	3,862	3,939	4,017	Confinuing	TBD
	Quantity of RDT&E Articles	E Articles	0	0	0	0	0	0	0	0	0
(D)	A. Mission Description The mission of this prog availability of defense sy development.	A. Mission Description The mission of this program is to gain access to our Allies' best defense technologies, eliminate costly duplication of research and development efforts, accelera availability of defense systems, and to deploy and sustain common or interoperable USAF and Allied equipment through international cooperative research and development.	Allies' best de	fense techn n or interope	ologies, elin erable USAF	ninate costly	duplication equipment tl	of research hrough inter	and develop national coc	llies' best defense technologies, eliminate costly duplication of research and development efforts, accelerate tain common or interoperable USAF and Allied equipment through international cooperative research and	accelerate arch and
	The USAF is party materiel solutions to manage these intern technology transfer Included in this bud for cooperative oppo Development (ICR& Program (ESEP). F	The USAF is party to multiple international cooperative agreements to solve common US and Allied military scientific and technological problems and to develop materiel solutions to harmonize coalition requirements. This program funds the Department of the Air Force to support, develop, process, negotiate, implement, and manage these international cooperative agreements and projects in compliance with statutory reporting provisions and exacting legal statutes, fiscal constraints, technology transfer controls, intellectual property rights, third party transfer provisions, quid-pro-quo criteria, industrial base factors, and political-military interests. Included in this budget are domestic and international technology assessment teams; specialized working groups; long-term technology project developments; supportor cooperative opportunity assessments; developing, processing, and negotiating international agreements; oversight of International Cooperative Research and Development (ICR&D) projects; overseas R&D liaison and coordination offices; bilateral and multilateral staff talks; and the Engineering and Scientist Exchange Program (ESEP). Funds USAF participation in the NATO Air Force Armaments Group (NAFAG) and NATO Research and Technology Organization (RTO).	ive agreements. This proferd ind projects in this, third par I technology, processing, on and coord IATO Air Fo	nts to solve of the total transfer of the transfer of assessment and negotial ination officered Armame	common US the Departm e with statut rovisions, qu teams; speci ting internati ces; bilateral ents Group (and Allied 1 ent of the Ai ory reporting uid-pro-quo ialized work ional agreen and multilan	nilitary scie. r Force to su g provisions criteria, indt ing groups; lents; oversi teral staff tal	ntific and te apport, devel and exactin astrial base flong-term te ght of Interr lks; and the seearch and deserted and des	chnological lop, process, g legal statu factors, and j chnology proteinational Coo attional Coo Engineering Technology	ve agreements to solve common US and Allied military scientific and technological problems and to devel S. This program funds the Department of the Air Force to support, develop, process, negotiate, implement, d projects in compliance with statutory reporting provisions and exacting legal statutes, fiscal constraints, its, third party transfer provisions, quid-pro-quo criteria, industrial base factors, and political-military intertechnology assessment teams; specialized working groups; long-term technology project developments; st processing, and negotiating international agreements; oversight of International Cooperative Research and mand coordination offices; bilateral and multilateral staff talks; and the Engineering and Scientist Exchang ATO Air Force Armaments Group (NAFAG) and NATO Research and Technology Organization (RTO).	ve agreements to solve common US and Allied military scientific and technological problems and to develop. This program funds the Department of the Air Force to support, develop, process, negotiate, implement, and d projects in compliance with statutory reporting provisions and exacting legal statutes, fiscal constraints, ts, third party transfer provisions, quid-pro-quo criteria, industrial base factors, and political-military interests. technology assessment teams; specialized working groups; long-term technology project developments; support processing, and negotiating international agreements; oversight of International Cooperative Research and n and coordination offices; bilateral and multilateral staff talks; and the Engineering and Scientist Exchange ATO Air Force Armaments Group (NAFAG) and NATO Research and Technology Organization (RTO).
99	FY 1999 (\$ in Thousands) \$100 NA	Isands) NATO C3 Agency (NC3A) - Funded the US R&D Coordination Office and administrative support for the assigned US Engineering and Technical professionals and cooperative research and development activities assigned to the NC3A.	Funded the U	IS R&D Cox	ordination O levelopment	office and aduactivities as	ministrative signed to the	support for e NC3A.	the assigned	l US Enginee	ring and
(£)	\$243	Engineer and Scientist Exchange Program (ESEP) - Funded the Air Force execution and the management oversight of ESEP. Funded approximately nine field level military and civilian scientists from Air Force Research Laboratory, for two year tours at selected European and Asian Government Research Laboratories or other Technical Institutions. ESEP Memoranda of Understanding are in place with 16 countries.	nge Program military and	(ESEP) - Fu civilian scie	anded the Air entists from	r Force exec Air Force Ru utions. ESE	ution and the esearch Labo	e manageme oratory, for t	ant oversight two year tou standing are	t of ESEP. Firs at selected in place with	anded European and 16 countries.
<u>(5)</u>	(U) \$1,256	International Cooperative Research and Development (ICR&D) - Funded USAF overseas R&D liaison offices. Funded management support and oversight of USAF Foreign Comparative Test Program and NATO Cooperative R&D Program. Funded USAF participation at the NATO Four-Power Council, NATO Air Force Armaments Group (NAFAG), and its six subgroups to promote NATO harmonization of requirements, standardization, and new cooperative R&D programs. Funded USAF participation at the US-Japan Systems and Technology Forum and its four sub-groups. Funded expanded technology acquisition contracts and follow-on cooperative opportunities with Russia, Ukraine, and Eastern	earch and De omparative T Vir Force Arr erative R&D I technology	velopment (est Program naments Gruppograms).	(ICR&D) - I n and NATO oup (NAFA! Funded US,	Tunded USA Cooperative G), and its si AF participal	F overseas I: R&D Prog x subgroups tion at the U cooperative	&D liaison ram. Funde to promote S-Japan Sysoportunitie	offices. Fur d USAF par NATO harr stems and T se with Russ	arch and Development (ICR&D) - Funded USAF overseas R&D liaison offices. Funded management supportupative Test Program and NATO Cooperative R&D Program. Funded USAF participation at the NATO ir Force Armaments Group (NAFAG), and its six subgroups to promote NATO harmonization of requirementative R&D programs. Funded USAF participation at the US-Japan Systems and Technology Forum and its technology acquisition contracts and follow-on cooperative opportunities with Russia, Ukraine, and Eastern	nent support and he NATO requirements, rum and its four nd Eastern
P	Project 664645			Page	Page 1 of 8 Pages	S				Exhibit R-2 (Exhibit R-2 (PE 1001004F)
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	RDT	RDT&E BUDGET ITEM JUSTIFICATION S	JSTIFICATION SHEET (R-2 Exhibit)	DATE February 2000
90 90	вирсет астилту 06 - Management and Support		PE NUMBER AND TITLE 1001004F International Activities	PROJECT 664645
9	A. Mission Description Continued			
9	FY 1999 (\$ in Thousands) Continued			
<u>(5)</u>	\$269	Europe. Partially funded technical assessments and international agreements negotiation start-up costs associated with promising cooperative R&D programs. Funded preliminary and negotiation costs associated with USAF AWACS NATO cooperative R&D funded programs and support for the NATO AWACS Board of Directors. Funded International Cooperative Opportunities Group (ICOG) efforts to harmonize Four-power requirements and initiate agreements to explore these opportunities. Air Force International Program Support Office (AFIPSO) - Funded AFIPSO to process ICR&D Agreements. The following is a partial list of agreements that were either signed or under development in FY99: Argentina: Seismic Monitoring; Australia: Clutter Mitigation for Over the Horizon Radar, High Altitude Endurance UAV, Virtual Air Commander; Bolivia: Seismic Monitoring; Chile: Ionoshperic Research; Canada: Space Based Surveillance and Space Systems, ground and Space Radiation Effects of Quantum Well Infrared Photometer Sensors, TRDP; Czech Republic: ESEP; Egypt: TRDP, Nuclear Test Seismic Monitoring Array; Ethiopia: Seismic Monitoring; Four-Powers: Distributed Simulation Technologies, Unmanned Air Vehicles for	ical assessments and international agreements negotiation start-up costs associated with promising cooperative integrative integration costs associated with USAF AWACS NATO cooperative R&D funded programs and Soard of Directors. Funded International Cooperative Opportunities Group (ICOG) efforts to harmonize nitiate agreements to explore these opportunities. a Support Office (AFIPSO) - Funded AFIPSO to process ICR&D Agreements. The following is a partial list oned or under development in FY99: Argentina: Seismic and Infrasonic Monitoring; Australia: Clutter Mittigation gh Altitude Endurance UAV, Virtual Air Commander; Bolivia: Seismic Monitoring; Brazil: Seismic Monitorii c: Seismic Monitoring; Chile: Ionoshperic Research; Canada: Space Based Surveillance and Space Systems, fects of Quantum Well Infrared Photometer Sensors, TRDP, Czech Republic: ESEP; Egypt: TRDP, Nuclear Teiopia: Seismic Monitoring; Four-Powers: Distributed Simulation Technologies, Unmanned Air Vehicles for	tted with promising cooperative e R&D funded programs and ICOG) efforts to harmonize The following is a partial list of ring; Australia: Clutter Mitigation toring; Brazil: Seismic Monitoring, urveillance and Space Systems, SSEP; Egypt: TRDP, Nuclear Test , Unmanned Air Vehicles for
<u> </u>	\$250	Offensive Missions, Air Refueling Technologies; France: Effects of Ionosphere on Communications and Surveillance; Germany: ESEP, Geoscience Space Mission, Non-Linear Optics; Israel: Nonlinear Frequency Conversion Materials, Thulium Holium Energy Transfer Modeling; Italy: ESEP, Real-Time Information in the Cockpit, TRDP: Japan: ESEP; Korea: Seismic Monitoring, 3D Integrated Circuits, Modeling and Simulation of C3I Systems; LTTP: Coalition Command Control and Communications Demonstration and Material Interaction; Natrohaldia: C-130 Integrated Data Environment, Ionit Airborne Navigation and Attack (JOANNA) II, Laser Radiation and Material Interaction; Natrohaldia: Vacuum and Solid State Electronics and high Voltage/ Current Power Supply; Norway: ESEP, Toxic Effects of Jet Fuels; Paraguay: Seismic Monitoring; Poland: ESEP; Sweden: ESEP, Command and Control; Turkey: Seismic Monitoring; South Africa: Seismic Monitoring; Monitoring; Poland: ESEP; Sweden: ESEP, Command and Control; Turkey: Seismic Monitoring; South Africa: Seismic Monitoring; Monitoring; Poland: ESEP; Sweden: ESEP, Command and Control; Turkey: Seismic Monitoring; South Africa: Seismic Monitoring; Monitoring; Poland: ESEP; Sweden: ESEP, Command and Control; Turkey: Seismic Monitoring; South Africa: Seismic Monitoring; Monitoring; Poland: ESEP; Sweden: ESEP, Command and Control; Turkey: Seismic Monitoring; Poland: ESEP; Sweden: ESEP, Command and Control; Turkey: Seismic Monitoring; Poland: ESEP; Sweden: ESEP, Command and Consequences of Superagility, (6) Aeromedical Cours Methods, (4) Screening Protocol for Aeromedical Medications, (5) Human Consequences of Superagility, (6) Aeromedical Lessons from Acceleration and Positive Pressure Breathing Research, (7) Aircraft Weapon Compatibility, (8) Flight Control Law Development, (9) Ice Accretion and Positive Pressure Breathing Research, (10) Nonlinear Stability and Transition of Swept-Wing Boundary Layers, (11) Sensor Data Fusion and Integrated Mission Systems Concepts, (13) Gas Turbine Engine Contubusions an	ing Technologies; France: Effects of Ionosphere on Communications and Survn-Linear Optics, Israel: Nonlinear Frequency Conversion Materials, Thulium Fation in the Cockpit, TRDP; Japan: ESEP; Korea: Seismic Monitoring, 3D Inte TP: Coalition Command Control and Communications Demonstration Environ oint Airborne Navigation and Attack (JOANNA) II, Laser Radiation and Materials and high Voltage/ Current Power Supply; Norway: ESEP, Toxic Effects eleca: ESEP, Command and Control; Turkey: Seismic Monitoring; South Africe Trial/Demonstration, PIOS Phase II/II, Joint Development and Evaluation of lance System Concept Studies, Experiments and Trials. gy Organization (RTO) - Funded USAF participation in the NATO Research and work consisted of studies, technical exchanges, and reports in the follow (2) Multi-facility Wind Tunnel Testing for CFD Validation, (3) Deterministic dical Medications, (5) Human Consequences of Superagility, (6) Aeromedical search, (7) Aircraft Weapon Compatibility, (8) Flight Control Law Developmes) Nonlinear Stability and Transition of Swept-Wing Boundary Layers, (11) Ser d Mission Systems Concepts, (13) Gas Turbine Engine Combustion, Emissions Propellants, (15) Frequency Assignment, Sparing and Conservation. Continuegram with scientists and engineers from the Former Soviet Union and Central E	eillance; Germany: ESEP, Iolium Energy Transfer Modeling; grated Circuits, Modeling and mnent; NATO/Multilateral: C-130 rial Interaction; Netherlands: of Jet Fuels; Paraguay: Seismic ca: Seismic Monitoring; United f Electro-Optic Protection and Technology Board and RTO ring areas: (1) Computational Spectral Gust Methods, (4) Lessons from Acceleration and nt, (9) Ice Accretion and nt, (9) Ice Accretion and sor Data Fusion and Integration of s and Alternative Fuels, (14) Aging I Partnership for Peace initiatives urope.
P	Project 664645	Page 2	Page 2 of 8 Pages	Exhibit R-2 (PE 1001004F)
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	RDT&	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	Exhibit) DATE February 2000	y 2000
90 • 90	BUDGET ACTIVITY 06 - Management and Support		PE NUMBER AND TITLE 1001004F International Activities	PROJECT 664645
9	A. Mission Description Continued	tion Continued		
5 5	\$1,425 AFMC - Fully required by sta Cooperative R. Cooperative R. Coordinating C new areas of potentials of technology is cooperation the coop	funded Air Force tute for new and &D Programs. F Committee, Stand ossible cooperationage projects. ternational cooper oughout AFMC.	e Materiel Command activities to identify, assess, develop and report International Cooperative Agreements as existing projects. Supported Materiel Command activities for the USAF Foreign Comparative Test, and NATO unded USAF participation in panel meetings of the Technical Cooperation Program, Air Standardization lard NATO Agreements Working Groups, and other NATO forums. Funded periodic bilateral meetings to define on, and exploratory visits to France, Germany, Israel, United Kingdom, Canada, and other countries on new Funded the project engineers at centers and Air Force Research Laboratory (AFRL) in identifying, creating and erative agreements. Funded MAJCOM staff to support and promote international research and development Funded support for the Air force Technology Booth at International Forums. Funds small contracts in support program funded the support, management and documentation of these ICR&D efforts.	Agreements as est, and NATO dization ectings to define ies on new g, creating and levelopment acts in support
9	\$3,543	Total		
99	FY 2000 (\$ in Thousands) \$100 NC	sands) NC3A - Funds the US R&D Coordination Office and administrative support for the assigned US Engineering and Technical professionals and	for the assigned US Engineering and Technical prof	fessionals and
<u>(3</u>	\$243	cooperative Research and Development activities assigned to the NC3A. ESEP - Funds the Air Force execution and the management oversight of ESEP. Funds approximately ten field level military and civilian scientists from Air Force Research Laboratory, Product Centers, Test Centers and Air Logistics Centers in two year tours at selected European	EP. Funds approximately ten field level military and read Air Logistics Centers in two year tours at selections.	l civilian cted European
<u> </u>	\$1,317	and Asian Government Research Laboratories or other Technical Institutions. ESEP Memoranda of Understanding expected to be in place with 18 countries. ICR&D - Funds USAF overseas R&D liaison offices. Funds management support and oversight of USAF Foreign Comparative Test Program and NATO Cooperative R&D Program. Funds USAF participation at the NATO Four-Power Council, NAFAG, and its subgroups to promote	s. ESEP Memoranda of Understanding expected to I apport and oversight of USAF Foreign Comparative ATO Four-Power Council, NAFAG, and its subgrou	be in place with Test Program tys to promote
		NATO harmonization of requirements, standardization, and new cooperative K&D programs. Funds USAF participation at the US-Japan Systems and Technology Forum and its four sub-groups. Funds expanded technology acquisition contracts and follow-on cooperative opportunities with Russia, Ukraine, and Eastern Europe. Partially funds technical assessments and international agreements negotiation start-up costs associated with promising cooperative R&D programs. Funds continued development/ upgrades to the DoD International Agreements Management System. Funds preliminary and negotiation costs associated with USAF NATO cooperative R&D funded programs and support for the NATO AWACS Board of Directors. Funds International Cooperative Opportunities Group (ICOG) efforts to harmonize Four-power	e k&D programs. Funds USAF participation at the cechnology acquisition contracts and follow-on coope hical assessments and international agreements negled development upgrades to the DoD International ith USAF NATO cooperative R&D funded program poportunities Group (ICOG) efforts to harmonize For	US-Japan rrative otiation start-up Agreements s and support for ur-power
<u>(</u>	(U) \$250	requirements and initiate agreements to explore these opportunities. AFIPSO - Fully funds AFIPSO to process proposals for ICR&D Agreements. The following is a partial list of agreements that will be either signed or developed in FY00: Australia: APEP, Refractive Turbulence, Precision Location and Identification, Small Smart Bomb, Scintillation	s. The following is a partial list of agreements that vision Location and Identification, Small Smart Boml	vill be either b, Scintillation
مَ	Project 664645	Page 3 of 8 Pages	Exhibit R-2 (Exhibit R-2 (PE 1001004F)

	RDT8	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2000
90 -	вирсет астилту 06 - Management and Support		PE NUMBER AND TITLE 1001004F International Activities	PROJECT 664645
(£)	A. Mission Description Continued			
9	FY 2000 (\$ in Thousands) Continued Impacts on Co ESEP; Central Training Techn APEP, Observ Real-Time Info Norway: Low Paraguay: Seis Monitoring; S Monitoris; Mul	mmunications an African Republi rologies; Czech I ations and Mode ormation in the C cost Autonomou mic Monitoring; outh Africa: Seis ti-lateral: Refract	d Navigation Systems; Bolivia: Seismic Monitoring; Brazil: Atmospheric, Ionospheric and Magnetospheric, c: Seismic Monitoring; Chile: Ionoshperic Research, Infrasonic Monitoring; Canada: Distributed Mission Republic: ESEP; Egypt: TRDP, Nuclear Test Seismic Monitoring Array; Ethiopia: Seismic Monitoring; Germany: ling for Space Weather, Head Mounted Display; Israel: Aircraft and Battle Damage Repair; Italy: ESEP, ockpit, TRDP; Japan: Fiber-reinforced Ceramic Matrix Composites, ESEP; Korea: ESEP, Seismic Monitoring; sa Attack System Advanced Technology Demonstration, Global Positioning System Handheld Equipment; Poland: ESEP; Sweden: Human Centered Controls and Displays, ESEP, Command and Control; Turkey: Seismic mic Monitoring; United Kingdom: International Collaboration on Space Radiation Sensors, Chemical Agent ion and Propagation Modeling, LTTP: Aging Aircraft, Unmanned Air Vehicles for Offensive Missions, Air	nospheric and Magnetospheric, anada: Distributed Mission pia: Seismic Monitoring; Germany: nage Repair; Italy: ESEP, orea: ESEP, Seismic Monitoring; stem Handheld Equipment; mand and Control; Turkey: Seismic tion Sensors, Chemical Agent ss for Offensive Missions, Air
<u>(i)</u>	\$225	Refueling Technologies. NATO RATO Research and Technology Board and RTO panel activity. The FY00 program of work will consist of studies, technical exchanges, and reports in the following areas: (1) Application of Unmanned Air Vehicles, (2) System Concepts for Targets and Camouflage and Decoys, (3) High Power Microwaves, (4) Electronic Warfare Warning Systems, (5) Flight Test Measurement Techniques, (6) Electromagnetic Compatibility, (7) Hypersonic Propulsion, (8) Wind Tunnel Technology, (9) Screening for Aero Medical Medications, (10) Human Factors in Virtual Reality Applications. Continues Partnership for Peace initiative through the R&T outreach program	Research and Technology Board and RTO panel activing the following areas: (1) Application of Unmanned Microwaves, (4) Electronic Warfare Warning Systemersonic Propulsion, (8) Wind Tunnel Technology, (9) plications. Continues Partnership for Peace initiative to the continues of Partnership for Pea	ity. The FY00 program of work Air Vehicles, (2) System Concepts ms, (5) Flight Test Measurement Screening for Aero Medical through the R&T outreach program
<u>(5)</u>	\$1,525	With scientists and engineers from the former Soviet Union and Central Europe. AFMC - Fully funds Air Force Materiel Command activities to identify, assess, develop, and report International Cooperative Agreements as required by statute for new and existing projects. Supports Materiel Command activities for the USAF Foreign Comparative Test, and NATO Cooperative R&D Programs. Funds USAF participation in panel meetings of The Technical Cooperation Program, Air Standardization Coordinating Committee, NATO Working Groups, and other NATO forums. Funds periodic bilateral/multilateral meetings to define new areas of possible cooperation and exploratory visits to France, Germany, Israel, United Kingdom, Canada, and other countries on new technology exchange projects. Funds the project engineers at centers and AFRL in identifying, creating and staffing new international cooperative agreements. Funds MAJCOM staff to support and promote international research and development cooperation throughout AFMC. Funds support for the Air Force Technology Booth at International Forums. Funds small contracts in support of technology initiatives. This program	om the former Soviet Union and Central Europe. Materiel Command activities to identify, assess, develop, and report International Cooperative Agreements existing projects. Supports Materiel Command activities for the USAF Foreign Comparative Test, and NAT unds USAF participation in panel meetings of The Technical Cooperation Program, Air Standardization O Working Groups, and other NATO forums. Funds periodic bilateral/multilateral meetings to define new a sloratory visits to France, Germany, Israel, United Kingdom, Canada, and other countries on new technology project engineers at centers and AFRL in identifying, creating and staffing new international cooperative staff to support and promote international research and development cooperation throughout AFMC. Funds sology Booth at International Forums. Funds small contracts in support of technology initiatives. This program	nal Cooperative Agreements as in Comparative Test, and NATO gram, Air Standardization teral meetings to define new areas r countries on new technology international cooperative on throughout AFMC. Funds nology initiatives. This program
(U)	. \$3,660 Project 664645	Will, in addition, fund the support, management and documentation of these ICK&LD efforts. Total Page 4 of 8 Pages	id documentation of these ICK&D efforts.	Exhibit R-2 (PE 1001004E)
	olect control	Logot	1 01 0 1 ages	LAIRDIC 17-2 (T.L. 100 10041)

	RDT8	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2000
90 -	вирсет астіліту 06 - Management and Support	PE NUMBER AND TITLE 1001004F International Activities	PROJECT 664645
<u>e</u>	A. Mission Description Continued	tion Continued	
93	EY 2001 (\$ in Thousands)	sands) NG2 A Emily tha HS B & D Condination Office and administration answers for the conjugated HS Emily and	Land Town
<u>(</u>	\$243	ecoperative Research and Development activities assigned to the NC3A. ESEP - Funds the Air Force execution and the management oversight of ESEP. Funds approximately eight field level military and civilian scientists from Air Force Research Laboratory, Product Centers, Test Centers and Air Logistics Centers in two year tours at selected European	and recomment processionals and eld level military and civilian year tours at selected European
<u>(5)</u>	\$1,399	and Asian Government Research Laboratories or other Technical Institutions. ESEP Memoranda of Understanding are expected to be in place with 20 countries. ICR&D - Funds USAF overseas R&D liaison offices. Funds management support and oversight of USAF Foreign Comparative Test Program and NATO Cooperative R&D Program. Funds USAF participation at the NATO Four-power Council, NAFAG, and its subgroups to promote NATO harmonization of requirements standardization and new cooperative R&D programs. Funds USAF participation at the IIS_large.	nding are expected to be in place eign Comparative Test Program G, and its subgroups to promote articination at the ITS_lange
		Systems and Technology Forum and its four sub-groups. Funds expanded technology acquisition contracts and follow-on cooperative opportunities with Russia, Ukraine, and Eastern Europe. Partially funds technical assessments and international agreements negotiation start-up costs associated with promising cooperative R&D programs. Funds continued development/ upgrades to the DoD International Agreements	d follow-on cooperative al agreements negotiation start-up od International Agreements
		Management System. Funds preliminary and negotiation costs associated with USAF NATO cooperative R&D funded programs and support for the NATO AWACS Board of Directors. Funds International Cooperative Opportunities Group (ICOG) efforts to harmonize Four-power requirements and initiate agreements to explore these opportunities.	D funded programs and support for to harmonize Four-power
9	\$276	AFIPSO - Fully funds AFIPSO to process the rapidly increasing number of proposals for ICR&D Agreements. Work will continue on agreements developed, but not signed, during FY00 and work will be initiated in the following areas of interest and others resulting from prior year technology assessments: Asia: Unmanned Aerial Vehicles, Early Warning Systems, Theater Missile Defense, Satellites, Command, Control, Communication, Computer, Information and Intelligence, Effects on Global Positioning Systems; Europe: Distributed Simulation Technology,	. Work will continue on st and others resulting from prior ense, Satellites, Command, Control, stributed Simulation Technology,
<u>(5)</u>	\$200	Space, Environmental Issues, Aging Auroral, Trogrammance The Space, Agent Detect Weapon, John Tangening, 1001, Satellites, Space, Environmental Issues, Monitoring of Chemical/Biological Warfare, Central and South America: Monitoring of Chemical/Biological Warfare, Satellites, Space, Environmental Issues. NATO RTO - Funds USAF participation in the NATO Research and Technology Board and RTO panel activity. The FY01 program of work will consist of studies, technical exchanges, and reports in the following areas: (1) Operational and Technical Studies and Analysis, (2) Modeling and Simulation, (3) Advanced System Concepts, Integration and Engineering Techniques Across the Spectrum of Platforms and	y, John Targellig 1001, Satellites, ; Central and South America: vity. The FY01 program of work Studies and Analysis, (2) e Spectrum of Platforms and
		Operating Environments, (4) Amondable Electronics, (5) Active and rassive Sensors, (6) information warrate Systems, (7) Communication and Networks, (8) Improved Performance, Affordability, and Safety of Vehicle, Platform, Propulsion, and Power Systems, (9) Optimize Performance, Health, Well Being and Safety of the Human in Operational Environments with consideration of Affordability. Continues Partnership for Peace	Systems, (7) Communication and Systems, (9) Optimize Performance, . Continues Partnership for Peace
ā	Project 664645	Page 5 of 8 Pages	Exhibit R-2 (PE 1001004F)

	RDT&E BUDGET ITEM JUSTIFICATION S	STIFICATION SHEET (R-2 Exhibit)	£	DATE February 2000	
90 00	BUDGET ACTIVITY 06 - Management and Support	PE NUMBER AND TITLE 1001004F International Activities	al Activities	PR 66	PROJECT 664645
<u>(</u>	A. Mission Description Continued				
<u>E</u>	FY 2001 (\$ in Thousands) Continued	Can the second second second from the second	o estimated and an estimated and estimated an estimated and estimated and an estimated and estimated and estimated an estimated and estimated and estimated and estimated an estimated and estimated an estimated and estimated and estimated and estimated an estimated and estimated and estimated and estimated an estimated and estimated and estimated an estimated and estimated an estimated and estimated and estimated an estimated and estimated and estimated and estimated and estimated an estimated and estimated and estimated and estimated an estimated and estimated and estimated and estimated and estimated and estimated and estimate		
<u>(a)</u>	\$1,545 AFMC - Fully funds Air Force Materiel Command activities to identify, assess, develop, and report International Cooperative Agreements as required by statute for new and existing projects. Supports Materiel Command activities for the USAF Foreign Comparative Test, and NATO Cooperative R&D Programs. Funds USAF participation in panel meetings of The Technical Cooperation Program, Air Standardization Coordinating Committee, NATO Working Groups, and other NATO forums. Funds periodic bilateral/multilateral meetings to define new areas	each program with scientists and engineers from the former Soviet Union and Central Europe. Materiel Command activities to identify, assess, develop, and report International Cooperative Agreements as existing projects. Supports Materiel Command activities for the USAF Foreign Comparative Test, and NATC unds USAF participation in panel meetings of The Technical Cooperation Program, Air Standardization Oworking Groups, and other NATO forums. Funds periodic bilateral/multilateral meetings to define new are	finer Soviet Union a pp, and report Internates for the USAF For thnical Cooperation I	nd Central Europe. trional Cooperative Agreemen eign Comparative Test, and N Program, Air Standardization tilateral meetings to define nev	ts as IATO w areas
	of possible cooperation and exploratory visits to France, Germany, Israel, United Kingdom, Canada, and other countries on new technology exchange projects. Funds the project engineers at centers and AFRL in identifying, creating and staffing new international cooperative agreements. Funds MAJCOM staff to support and promote international research and development cooperation throughout AFMC. Funds support for the Air Force Technology Booth at International Forums. Funds small contracts in support of technology initiatives. This program will, in addition, fund the support, management and documentation of these ICR&D efforts.	loratory visits to France, Germany, Israel, United Kingdom, roject engineers at centers and AFRL in identifying, creating staff to support and promote international research and devel ology Booth at International Forums. Funds small contracts of management and documentation of these ICR&D efforts.	ydom, Canada, and or eating and staffing n development cooper itracts in support of t	ther countries on new technold ew international cooperative ation throughout AFMC. Fun echnology initiatives. This pr	ogy ogram
3	\$3,773 Total				,
9	B. Budget Activity Justification This program is in Budget Activity 6, Management and Support, because it provides for general Research & Development Management support for all aspects of International Research & Development in the USAF.	ovides for general Research &	Development Mana	gement support for all aspects	of
9	C. Program Change Summary (\$ in Thousands)				
(I)	Descriptor Descriptor Dudas (EV 2000 DDD)	FY 1999	FX 2000	FY 2001	Total Cost
36	rrevious rresidents Budget (r.1. 2000 r.br.) Appropriated Value	3,752	3,750	2,607	
3	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-154	-10		
	o. Omnibus or Other Above Threshold Reprogram	CC-	-56		
	d. Below Threshold Reprogram		}		
	e. Rescissions	-20	-24		
5	f. Other Adiustments to Budget Years Since FY 2000 PBR			-34	
<u> </u>	Current Budget Submit/FY 2001 PBR	3,543	3,660	3,773	TBD
<u>c</u>	Project 664645	Page 6 of 8 Pages		Exhibit R-2 (PE 1001004F)	1004F)
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	RDT&E BUDGET ITEM JU		STIFICATION SHEET (R-2 Exhibit)	SHEE	T (R-2	Exhi	bit)		DATE	l	February 2000	000	
<u>9</u>	BUDGET ACTIVITY 06 - Management and Support	:		PE NUME 10010	PE NUMBER AND TITLE 1001004F Interr	πιΕ ernati	PE NUMBER AND TITLE 1001004F International Activities	ivities	-			PROJECT 664645	⊢ rù
9	C. Program Change Summary (\$ in Thousands) Continued) Continue	-										
<u>(3</u>	Significant Program Changes: N/A												
9	(U) D. Other Program Funding Summary (\$ in Thousands) FY 1999 FY 2000 Actual Estimate	iousands) FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	7	FY 2003 Estimate	FY 2004 Fertimate	FY 2005 Fetimate	005 pate	Cost to	ol §	Total Cost	Cost
9							A DITTO			ATOMINA A	3]		
<u>(3</u>	E. Acquisition Strategy This program element is the only source of USAF funds to identify and initiate opportunities for international armaments cooperation to (a) deploy and support common or interoperable equipment with our allies; (b) leverage USAF resources with our allies through cost sharing and economies of scale; and (c) exploit the best US and allied technologies for equipping coalition forces. We obtain these benefits only after international cooperative opportunities are identified, explored, developed, assessed and after the international agreements are negotiated and concluded. This PE provides funds to execute up-front armaments cooperation responsibilities, rationalize cooperative opportunities, assess allied technologies, and generate sound, cost-effective cooperative programs between the USAF and our international partners. Once these initiatives and programs are started as international efforts they are transferred to the appropriate technology or systems program office and are funded in their own program elements.	funds to ider rage USAF We obtain th negotiated a technologies tarted as inte	ntify and initia resources with nese benefits on concluded, and generate structional effo	te opportur n our allies only after in This PE sound, co	nities for i through conternations provides f st-effective	nternatio ost sharir al cooper. unds to e e cooper?	nal armame ng and econ ative opport xecute up-f ative progra ative progra	ents cooper omies of s tunities are ront armar ms betwee technolog	cale; and cale; and is identification to ((a) deploy (c) exploi ed, explore operation i sAF and or ems progra	and supp it the best ed, develc responsib ur interna am office	ort comm US and pped, ilities, tional	uou uou
9	F. Schedule Profile												
			-	EY 1999	6 6 7	_	司, -	FY 2000	-	-	EX 2001	6	_
3	-NATO C3 Agency Program Review		•	1	ז	r *	7	า	r×	-	١		+ ×
9	-NATO Research & Technology Board		*		*	•		×		×		×	
9	-Bilateral Technology R&D Projects MOUs		* *	* *	* ;	*)		×	×	×;	×		×;
36	 Cooperative K&D Projects Foreign Comparative Testing Prioritization Board 		f	÷ *	ŧ	ŧ	× × ×	*	×	×	××	· ×	×
9	-NATO Cooperative R&D Prioritization Board				*			×				×	
9	-R&D Loans of Defense Equipment		* :	*	* :	*	×	×	×	×	×		×
<u> </u>	-Systems & 1 echnology Forum (JA) -Other Bilateral forums (CA, BZ, IS, SW, FR)		* *	*	+ +	*	× × ×	× ×	×	× ×	×	× ×	×
3	-Data/Information Exchange Annexes		*	*	*	*	×	×	×	×	: ×		: ×
3	-Engineer and Scientist Exchanges			*		*	×		×		×	, ,	×
ш	Project 664645		Pag	Page 7 of 8 Pages	Ses	i				Exhibit R-2 (PE 1001004F)	8-2 (PE 1	001004	F)
				000									ł

RDT&E BUDGET ITEM JUSTIFICATION	STIFICATION SHEET (R-2 Exhibit)	xhibit)		Ω	DATE Fel	February 2000	
BUDGET ACTIVITY 06 - Management and Support	PE NUMBER AND TITLE 1001004F International Activities	E national	Activities			PRC 66	PROJECT 664645
(U) F. Schedule Profile Continued	FY 1999		FY 2000			FY 2001	,
(U) -NATO Air Force Armaments Group (U) -Four-Power Air Senior National Representatives * (U) -Four-Power Long-Term Technology Working Group	C * * * * * * * *	- × ×	× × ×	4 ×	- × ×	X X 3	4 X
Project 664645	Page 8 of 8 Pages				Exhibit	Exhibit R-2 (PE 1001004F)	004F)

PE NUMBER: 0101113F PE TITLE: B-52 SQUADRONS

Operational System Development FY 1999 FY 2000 FY 2001 FY 2002 FY 2003 FY 2004 FY 2004		RDT&E BUDGET ITEM JI	USTIFIC	ATION	USTIFICATION SHEET (R-2 Exhibit)	(R-2 Ex	hibit)		DATE	Februa	February 2000
COST (\$ in Thousands) FY 1999	BUDGE1	ACTIVITY perational System Development			PE NUMBER 0101113	AND TITLE	SQUADR	ONS			
Total Program Element (PE) Cost 6,042 39,658 50,787 48,776 17,842 9,678 Advanced Weapons Integrations (AWI) 3,320 0 0 0 0 0 0 Air Force Mission Support System (AFMSS) 2,722 2,669 0 0 0 0 0 0 Avionics Midlife Improvement (AMI) 0 29,033 38,787 31,276 17,842 0 0 Situational Awareness Defensive Improvement 0 7,956 12,000 17,500 0 0 0		COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
Advanced Weapons Integrations (AWI) 3,320 0 0 0 0 0 0 0 Air Force Mission Support System (AFMSS) 2,722 2,669 0 0 0 0 0 0 Avionics Midlife Improvement (AMI) 0 29,033 38,787 31,276 17,842 0 Situational Awareness Defensive Improvement 0 7,956 12,000 17,500 0 0		Total Program Element (PE) Cost	6,042	39,658	282'09	48,776	17,842	9,678	24,141	Continuing	TBD
Air Force Mission Support System (AFMSS) 2,722 2,669 0 0 0 0 0 Avionics Midife Improvement (AMI) 0 29,033 38,787 31,276 17,842 0 Situational Awareness Defensive Improvement 0 7,956 12,000 17,500 0 0	674370	Advanced Weapons Integrations (AWI)	3,320	0	0	0	0	0	0	0	6,393
Avionics Midlife Improvement (AMI) 0 29,033 38,787 31,276 17,842 0 Situational Awareness Defensive Improvement 0 7,956 12,000 17,500 0 0	674401	Air Force Mission Support System (AFMSS)	2,722	2,669	0	0	0	0	0	0	14,400
Situational Awareness Defensive Improvement 0 7,956 12,000 17,500 0 0	674810	Avionics Midlife Improvement (AMI)	0	29,033	38,787	31,276	17,842	0	0	0	134,400
	674875	Situational Awareness Defensive Improvement	0	7,956	12,000	17,500	0	0	0	0	71,690
B-52 Global Air Traffic Management (GATM) 0 0 0 0 9,678	674876	B-52 Global Air Traffic Management (GATM)	0	0	0	0	0	9,678	24,141	Continuing	TBD
Quantity of RDT&E Articles 0 0 0 0 0 0 0 0		Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

Note: RDT&E articles are not separately priced

(U) A. Mission Description

theater CINCs with a long range strike capability. The B-52 is undergoing a Conventional Enhancement Modification which allows it to carry MIL-STD 1760 weapons. The current service life of the aircraft extends to 2040. The Advanced Weapons Integration (AWI) program supports the conventional enhancement of the B-52 through situational awareness and system control. The B-52's Avionics Midlife Improvement program is a new start that will replace insupportable mission critical parts of the Offensive Avionics System that control navigation and weapons delivery on the B-52. The B-52 program management is provided by Air Force Material Command's The B-52 is the primary nuclear roled bomber in the USAF inventory. It provides the only Air Launch Cruise Missile carriage in the USAF. The B-52 also provides Air-to-Surface Stand-off Missile (JASSM). The Air Force Mission Support System supports the Air Force movement of all mission planning to a common system. Electronic Countermeasures Improvement program improves supportability, increases memory, allows reprogrammability, and adds a new display for improved the addition of the Wind Corrected Munitions Dispenser (WCMD), Joint Direct Attack Munition (JDAM), Joint Stand-off Weapon (JSOW), and the Joint Oklahoma Air Logistics Center. The prime contractor for these projects is Boeing, McDonnell Defense in Wichita Kansas.

(U) B. Budget Activity Justification

This program is in budget activity 7 - Operational System Development, because it supports a currently operational system.

Page 1 of 20 Pages

Exhibit R-2 (PE 0101113F)

905

	RDT&E BUDGET ITEM JUSTIFICATION	STIFICATION SHEET (R-2 Exhibit)		DATE February 2000	y 2000
80DC 07 -	вирдет Астіvіту 07 - Operational System Development	PE NUMBER AND TITLE 0101113F B-52 SQUADRONS	ADRONS		
(n)	C. Program Change Summary (\$ in Thousands)	FY 1999	FY 2000	FY 2001	Total Cost
9	Previous President's Budget (FY 2000 PBR)	6,418	32,139	39,240	31,902
<u>(E)</u>	Appropriated Value	6,436	40,139	•	,
3	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-161			
	b. Small Business Innovative Research	-199			
	c. Omnibus or Other Above Threshold Reprogram				
	d. Below I hreshold Keprogram		c		
	e. Kescissions f Other	7	0 کا		Gat
(L)	1. Other A dissement to Budget Voice Since EV 2000 DBD	+0 -	-13	11 547	Ual
) E	Adjustificitis to budget 1 cats silice f 1 2000 fbr	6 043	30.659	787 05	UGT
9	Substitution of FY00	240,0	02,020	70,100	
3	Significant Program Changes:				
	(U) One new project initiated with this submission: Avionics Midlife Improvement (AMI) starting in FY00. See individual project description (Exhibits R-2/R-3)	mprovement (AMI) starting in F	FY00. See individ	lual project description ()	Exhibits R-2/R-3)
	for details.				
	(U) Actual number to SPO \$5.986 total FY99 (\$3.433 AWI and \$2.553 for AFMSS)	FMSS)			
	(U) FY01 number includes \$12.0M for the Situational Awareness Defensive miorities. The FMD schedule will lengthen by at least three months.	Awareness Defensive Improvement (SADI) program - program reduced by \$453K in support of other AF three months	- program reduced	l by \$453K in support of	other AF
	pilotitics, the exite selection will religited by at least time infinitis.				
	Раяв	Page 2 of 20 Pages		Exhibit R-2 (Exhibit R-2 (PE 0101113F)
	292	20120120			

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	USTIFIC,	ATION (SHEET ((R-2A E	xhibit)		DATE	Februa	February 2000
91- 20	BUDGET ACTIVITY O7 - Operational System Development			PE NUMBER 010113	PE NUMBER AND TITLE 0101113F B-52 (PE NUMBER AND TITLE 0101113F B-52 SQUADRONS	ONS			PROJECT 674370
	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
674370	70 Advanced Weapons Integrations (AWI)	3,320	0	0	0	0	0	0	0	9,393
(0)	A. Mission Description The requirement exists for the integration of near precision and precision guided MIL-STD 1760 weapons on the B-52. This includes the Wind Corrected Munitions Dispenser (WCMD), Joint Direct Attack Munition (JDAM), Joint Stand-off Weapon (JSOW), and the Joint-Air-to-Surface Stand-off Missile (JASSM). The B-52 is designated as the threshold bomber test platform for WCMD, JDAM, and JASSM with the objective of meeting aircraft integration and weapon testing requirements. To provide complete understanding of the program and its funding, the following schedule information in section C will reflect the money received from the WCMD, JDAM, and JASSM program elements for weapons integration on the B-52.	recision and p (JDAM), Join r WCMD, JD. and its fundin	recision guid t Stand-off V AM, and JA. ig, the follov n the B-52.	ded MIL-ST. Weapon (JSC SSM with th	D 1760 wea)W), and the e objective of e information	pons on the Joint-Air-tc of meeting a	B-52. This i -Surface St. ircraft integr C will reflec	includes the and-off Miss artion and we	Wind Correctile (JASSM) capon testing received from	Ision and precision guided MIL-STD 1760 weapons on the B-52. This includes the Wind Corrected Munitions AMI), Joint Stand-off Weapon (JSOW), and the Joint-Air-to-Surface Stand-off Missile (JASSM). The B-52 is CMD, JDAM, and JASSM with the objective of meeting aircraft integration and weapon testing requirements. It is funding, the following schedule information in section C will reflect the money received from the WCMD, regration on the B-52.
9999	FY 1999 (\$\frac{\mathbb{x}}{\mathbb{in}} \text{Thousands}) \$3,020 Continued Software development for JSOW and JASSM \$300 Flight/Ground Testing \$3,320 Total	ment for JSO'	W and JASS	M3						
999	FY 2000 (\$ in Thousands) \$0 No Activity \$0 Total									
999	FY 2001 (\$ in Thousands) \$0 No Activity \$0 Total									
<u> </u>	B. Project Change Summary Not applicable		·							
<u>C</u>	Project 674370		Page	Page 3 of 20 Pages	SS			Ä	hibit R-2A (Exhibit R-2A (PE 0101113F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	GET ITEN	1 JUSTIF	ICATION	SHEET (R-2A Exh	lbit)		DATE February 2000	y 2000
BUE 07	вирсет астіліту 07 - Operational System Development	velopment			PE NUMBER AND TITLE 0101113F B-52	AND TITLE F B-52 SQ	4D TITLE B-52 SQUADRONS	S		PROJECT 674370
9	(U) C. Other Program Funding Summary (\$\sumsymbol{s}\) in Thousands) EY 1999 EY 2000	immary (\$ in T <u>FY 1999</u>	Thousands) EY 2000 Estimate	FY 2001 Estimata	FY 2002 Estimata	FY 2003 Estimate	FY 2004	FY 2005 Extimate	Cost to	Total Cost
9		671	479	964	250	0	Totallian	Collinate	0	2,364
99	Related Activities RDT&E (WCMD - PE	0	0	0	0	0	0	0	0	0
9		0	0	0	0	0	0	0	0	0
9		3,457	6,420	1,775	0	0	0	0	0	11,652
5	27100F) TDT&E (JSOW - PE27324F)	0	250	0	0	0	0	0	0	250
<u> </u>	D. Acquisition Strategy The AWI program placed Boeing Military Programs - Wichita Division, on a Cost-Plus-Fixed-Fee contract as the Product Development Organization supported by OC-ALC/LH. Due to a short notice requirement, interface development and initial software requirements definition was accomplished under the B-52 fleet support contract; a time and materials contract. AWI development is in two phases. The first phase supports WCMD and JDAM Stores Management Overlay (SMO) development, interface hardware development and Development Test and Evaluation (DT&E). The second phase supports JSOW and JASSM SMO development and DT&E. Due to the need for early Required Assets Availability and Initial Operational Capability, the Single Acquisition and Management Plan (SAMP) authorized concurrent development of software as the interface hardware design has been developed, the hardware design will be complete and compatible with all advance weapons.	g Military Prog tice requiremen ontract. AWI de development a y Required Ass yare as the interi	rams - Wichitut, interface de velopment is ind Developmets Availabilitace hardware r the hardware	a Division, on selopment and in two phases. ant Test and Evy and Initial Oy (MIL-STD 17) design has be	a Cost-Plus-Fix I initial softwar The first phase valuation (DT& perational Caps 60 umbilicals a en developed, t	ted-Fee contrace requirements supports WC ED. The secontability, the Sir and pylon attache he hardware do	ct as the Produstefantion was definition was MD and JDAN and phase supportele Acquisitics thements) transitesign will be c	nct Developme s accomplishe M Stores Mans orts JSOW and on and Manago tioned to proc complete and c	Wichita Division, on a Cost-Plus-Fixed-Fee contract as the Product Development Organization supported by face development and initial software requirements definition was accomplished under the B-52 fleet supportent is in two phases. The first phase supports WCMD and JDAM Stores Management Overlay (SMO) relopment Test and Evaluation (DT&E). The second phase supports JSOW and JASSM SMO development is albility and Initial Operational Capability, the Single Acquisition and Management Plan (SAMP) authorize rdware (MIL-STD 1760 umbilicals and pylon attachments) transitioned to production. Although, development ardware design has been developed, the hardware design will be complete and compatible with all advance	apported by leet support SMO) velopment and velopment of development of advance
9	E. Schedule Profile				FY 1999		EX	EY 2000	Ħ	FY 2001
5555	JDAM/WCMD SMO Software/hardware Req DT&E Test Planning Technical data development	(t)		* * *	3	4 * * *	2 × × - 2	₄	1 2	4
<u> </u>	P. 0			Pag	Page 4 of 20 Pages				Exhibit R-2A (PE 0101113F)	PE 0101113F)
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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	N SHEE	=T (R-	ZA Ex	hibit)			DATE	1	February 2000	2000	
BUDG 07 -	вирсет аститу 07 - Operational System Development	PE NUI 0101	PE NUMBER AND TITLE 0101113F B-52	ID TITLE B-52 SQUADRONS	QAD	RONS	مر				PROJECT 674370	≣כד 370
9	E. Schedule Profile Continued	FY	FY 1999			FY 2000	000			EY 2001	100	
4.5	7. Sand 1/8: At the tracking	* 5	3	4	- >	7	33	4	-	7	m	4
3 (3	Ground ingn tesung AFMSS module DT&E	*			< ⋈	×						
E	Program office support	*	*	*	×	×						
36	SOW/JASSIM SIMO Contractor Interface Development	*	*	*	×	×						
3	Software/hardware Reg DT&E	*	*	*	×	×	×	×	×	×		
3	Test planning	*	*	*	×	×	×	×	×	×	×	×
9	Technical data development	*	*	*	×	×						×
(3)	Ground/flight testing		*	*	×	×	×	×	×	×	×	×
9	AFMSS module DT&E	*	*	*	×	×	×	×	×	×	×	×
9	Program support office	*	*	*	×	×	×	×	×	×	×	×
٩	Project 674370	Page 5 of 20 Pages	Pages					Ш	Exhibit F	Exhibit R-2A (PE 0101113F)	01011	13F)

	RDT&E PROGRAM ELEMEN	RAM ELE		I/PROJECT C	OST BF	COST BREAKDOWN (R-3)	WN (R-3)		DATE Fe	February 2000	8
BUE 07	BUDGET ACTIVITY 07 - Operational System Development)evelopme	nt		PE NUMBER AN 0101113F		ID TITLE B-52 SQUADRONS	NS		9	PROJECT 674370
(3)	A. Project Cost Breakdown (\$ in Thousands)	(\$ in Thousand	<u>(SI</u>				0001 AG	000	000C X3	٠	EV 2001
99	Software/hardware requirements	nts					1 E. E.	3,014 3,06	0	₹ _	0
3							3,5	3,320	0		0
9	B. Budget Acquisition History and Planning Information (\$ in Thousands)	ry and Plannin	g Information	ı (\$ in Thousanc	<u>[S]</u>						
9	Performing Organizations:										
,	Contractor or	Contract									
	<u>Covernment</u> Performing	Method/1ype or Funding	Award or Obligation	<u>Pertorming</u> Activity	Project Office	Total Prior	Budget	Budget	Budget	Budget to	Total
		Vehicle	Date	EAC	EAC	to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
	Organiz	zations									
	ita, KS	CPFF	4 Sep 97	5,603	5,603	2,822	2,868	0	0	0	5,690
	88CG/SCCVO	Project Order	13 Mar 96	12	12	10	2	0	0	0	12
	Management Org	anizations									
		PMA	1 Oct 96	566	566	216	20	0	0	0	596
	SI	Project Order	16 Jul 97	1,350	1,350	1,350	0	0	0	0	1,350
		Project Order	3 Jun 97	48	48	48	0	0	0	0	48
	PEO/PMA-201	MIPR		75	75	75		0	0	0	75
	4 Sep 97										
	Evaluation Organizat	tions	9	•	•	•					
	419 C1F	Project Order	3/31/99	1,952	1,952	1,552 Total Prior	400 Rudget	Rudoet	Budget	Budget to	1,952 Total
	Subtotals					to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
	Subtotal Product Development					2,832	2,870	0	0	0	5,702
	Subtotal Support and Management	ment				1,689	20	0	0	0	1,739
	Subtotal Test and Evaluation					1,552	400				1,952
	Total Project					6,073	3,320	0	0	0	9,393
	Project 674370			Pag	Page 6 of 20 Pages	žes			Exhibi	Exhibit R-3 (PE 0101113F)	01113F)

	RDT&E	RDT&E BUDGET ITEM JU	STIFICA	TION 8	STIFICATION SHEET (R-2A Exhibit)	(R-2A E	xhibit)		DATE	Februa	February 2000
800c	вирсет астіvіту 07 - Operational System Development	m Development			PE NUMBER AN 0101113F	PE NUMBER AND TITLE 0101113F B-52	4D TITLE B-52 SQUADRONS	SNO			PROJECT 674401
	COST (\$ in Thousands)	rousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
674401	31 Air Force Mission Support System (AFMSS)	oort System (AFMSS)	2,722	2,669	0	0	0	0	0	0	14,400
Rem	Remark: Actual SPO FY99 dollars recieved = \$2.553.	llars recieved = \$2.553.									
9	A. Mission Description B-52 Air Force Mission aircraft/weapons/electror	A. Mission Description B-52 Air Force Mission Support System (AFMSS) was previously funded out of the AFMSS program element prior to FY98. The project develops aircraft/weapons/electronic (A/W/E) countermeasures modules to be used in conjunction with the core software modules to provide a Mission Planning Environment for	as previously	y funded out be used in c	t of the AFIV conjunction	ASS progran with the con	n element pri e software m	ior to FY98.	The project ovide a Miss	t develops sion Plannin	g Environment for
	planning B-52 missions. Block 1 provided the cap missions. It also adds It and allows the retiremen capability to the Joint M.	planning B-52 missions. AFMSS is the replacement system for the current Mission Data Preparation System (MDPS), the legacy system used for B-52 SIOP capability. Block 1 provided the capability to plan conventional gravity missions at the unit level. Block 2 is Y2K compliant and provides the capability to plan JDAM and WCMD missions. It also adds IU/TRS capability. Block 3 adds planning capability for AGM-84 and AGM-86C. Block 4 provides TRICOMS mission data import capability and allows the retirement of MDPS. Plus, it includes capability to plan the AGM-142, JSOW and JASSM. Block 5 will enable migration of the mission planning capability to the Joint Mission Planning System (JMPS).	system for the gravity missifulds planning capability to S).	ne current M ions at the u capability for the A	fission Data mit level. Bl or AGM-84 GM-142, JS	Preparation lock 2 is Y2 and AGM-8 OW and JA	System (MI K compliant SC. Block ∠ SSM. Block	OPS), the le	system for the current Mission Data Preparation System (MDPS), the legacy system used for B-52 SIOP cap gravity missions at the unit level. Block 2 is Y2K compliant and provides the capability to plan JDAM and V ds planning capability for AGM-84 and AGM-86C. Block 4 provides TRICOMS mission data import capab capability to plan the AGM-142, JSOW and JASSM. Block 5 will enable migration of the mission planning S).	used for B-2 lity to plan J ission data ii of the missi	52 SIOP capability. DAM and WCMD mport capability on planning
99999	EY 1999 (\$ in Thousands) \$412 Cor \$1,125 Init \$1,185 Cor \$2,722 Tot	onds) Completed operational test and installation of Block 2 software Initiated Block 4 operational requirements Continued Block 3 operational software Total	l installation equirements software	of Block 2	software						
33333	FY 2000 (\$ in Thousands) \$569 Init \$800 Cor \$1,300 Cor \$2,669 Tot	iate Block 5 operational rec nplete Block 3 operational nplete Block 4 operational al	quirements for migration to Jl software test and installation software test and installation	or migration t and installe t and installe	to JMPS ation ation						
999	FY 2001 (\$ in Thousands) \$0 No \$0 Tot	<u>ids)</u> No Activity Total									
ව	B. Project Change Summary N/A	mary									
۵	Project 674401			Page	Page 7 of 20 Pages	Se			Ä	hibit R-2A	Exhibit R-2A (PE 0101113F)
					1001						Ų.

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	M JUSTIFI	ICATION	SHEET (R-2A Ext	nibit)	DATE	E February 2000	y 2000	
I ₩ 6	з∪рсет АСТІVITY 07 - Operational System Development	ıt.		PE NUMBER AND TITLE 0101113F B-52	AND TITLE F B-52 SC	ID TITLE B-52 SQUADRONS			PROJECT 674401	
9	(U) C. Other Program Funding Summary (\$ in Thousands) EY 1999	Thousands) EX 2000 Estimate	EY 2001 Estimate	FY 2002 Estimate	FY 2003 Fertimate	FY 2004 Ferimate	FY 2005 Estimate	Cost to	Total Cost	pst
55	AF RDT&E Other APPN									
Ξ	D. Acquisition Strategy The AFMSS program is organically conducted at OC-ALC/LAS. Previously funded by the AFMSS program element.	1 at OC-ALC/L/	AS. Previously	funded by the	AFMSS prog	ram element.				
Ξ) E. Schedule Profile		-	FY 1999	4	EY 2000	3 4	EX ,	FY 2001	
33						1				
99) Contract award Block 4) Software development Block 4		××				×			
99	Contract award Block 5 Software development Block 5					××				
		development is a m, and test. The	scomplished a work package	ind delivered is are integrated	ncrementally. with one anot	Each work pac her and with th	kage within a blue AFMSS core.	ock build is trea	ted as a	
_	Project 674401		Page	Page 8 of 20 Pages			Ш	Exhibit R-2A (PE 0101113F)	E 0101113F)	
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	RDT&E PROGRAM ELEMENT	FIEME		/PROJECT COST BREAKDOWN (R-3)	OST BE	REAKDOV	VN (R-3)		DATE	Eobrige, 2000	5
BUL	BUDGET ACTIVITY				PE NUMBI	PE NUMBER AND TITLE				o dan da	PROJECT
0	07 - Operational System Development	opment			0101113F		B-52 SQUADRONS	NS		9	674401
9	A. Project Cost Breakdown (\$ in Thousands)	housands)					FV 1000	000	FV 2000	۶	EV 2001
56	Software development System Program Office support						7.5	2,630	2,595	g ∧ 4	1007 1 1
3							2,	2,722	2,669	. 6	
9	B. Budget Acquisition History and Planning Information (\$ in Thousands)	Planning In	<u>formatio</u>	n (\$ in Thousand	S						
3	Performing Organizations:										
	Contractor or Contract Government Method/	Tvpe	ard or	Performing	Project						
	ğu	l	Obligation	Activity	Office	Total Prior	Budget	Budget	Budget	Budget to	Total
	Activity Vehicle	e Date	Θı	EAC	EAC	to FY 1999	FY 1999	EX 2000	FY 2001	Complete	Program
	Aroquet Development Organizations Oklahoma ALC/LAS Project	ations Project Order 26 l	26 Mar 97	10,786	0	5,616	2,630	2,595		0	10,841
	Management Org										
			62	0	411	245	92	74		0	411
	OC-ALC/LAP Project	Project Order Jun 97	26	3,053	0	3,053				0	3,053
	Test and Evaluation Organizations		11 Dec 96	\$6	c	\$6				c	90
	11.7m		2	C	>	C				>	S
<u>e</u>	Government Furnished Prop										
	Contract Method/	Type	Award or								
	Item or Funding	gu	Obligation	Delivery		Total Prior	Budget	Budget	Budget	Budget to	Total
	Description Vehicle	e Date	į, Ω	Date		to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
	Product Development Property										
	Support and Management Property Test and Evaluation Property										
	Project 674401			Раде	Page 9 of 20 Pages	Seb			FX	Exhibit R.3 (PF 0101113E)	04443E)
				79n r	7 07 70 7	500					10110

RDT&E PROGRAM ELEMENT/PRO	I/PROJECT COST BREAKDOWN (R-3)	VN (R-3)		DATE Fe	February 2000	0
BUDGET ACTIVITY 107 - Operational System Development	PE NUMBER AND TITLE 0101113F B-52 SQUADRONS	QUADRO	4S		9	PROJECT 674401
Subtotals Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 1999 5,616 3,298 95 9,009	Budget EY 1999 2,630 92 2,722	Budget EY 2000 2,595 74 2,669	Budget FY 2001	Budget to Complete 0 0 0	Total Program 10,841 3,464 95 14,400
			·			
Project 674401	Page 10 of 20 Pages			Exhibi	Exhibit R-3 (PE 0101113F)	1113F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	ET ITEM JU	STIFICA	ATION S	SHEET (R-2A E	xhibit)		DATE	February 2000	ry 2000
8UDC 07	BUDGET ACTIVITY 17 - Operational System Development	elopment			PE NUMBEF 0101113	PE NUMBER AND TITLE 0101113F B-52 S	PE NUMBER AND TITLE 0101113F B-52 SQUADRONS	SNO			PROJECT 674810
	COST (\$ in Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
674810	10 Avionics Midlife Improvement (AMI)	(1)	0	29,033	38,787	31,276	17,842	0	0	66,580	134,400
(£)	A. Mission Description The current B-52H Offensive Avionics System (OAS) contains several subsystems which must be replaced. The Inertial Navigation System (INS) includes a spin mass gyro based on 1960's technology which will soon be unsupportable. The Avionics Control Unit (ACU) is an aging computer system with limited processing capability and memory. The Data Transfer Unit Cartridges (DTUCs) are bulky, unreliable and also based on old technology. The AMI program will use existing technology to replace these systems and the associated software to significantly increase OAS reliability, maintainability, and supportability while increasing capa and reducing operating costs.	onics System (OAS logy which will soo Transfer Unit Cart as and the associate	contains se on be unsupp ridges (DTU d software to	everal subsy ortable. Th (Cs) are bulk	stems which e Avionics C cy, unreliable ily increase C	must be rer Control Unit e and also ba	olaced. The lased (ACU) is an ased on old to ity, maintain	Inertial Navi aging comp echnology. ability, and	igation Syste outer system The AMI pr supportabilii	em (INS) inc with limited ogram will v	contains several subsystems which must be replaced. The Inertial Navigation System (INS) includes a spinning n be unsupportable. The Avionics Control Unit (ACU) is an aging computer system with limited processing idges (DTUCs) are bulky, unreliable and also based on old technology. The AMI program will use existing software to significantly increase OAS reliability, maintainability, and supportability while increasing capability
999	FY 1999 (\$ in Thousands) \$0 No Activity \$0 Total	,									
<u> </u>	FY 2000 (\$ in Thousands) \$12,800 Design and \$16,233 Design and \$29,033 Total \$2,062 OSD and AF withhold	nds) Design and development of Group A Hardware Design and development of replacement softwa Total	oup A Hardware placement software	ware ftware							
9999	FX 2001 (\$\sum_{\text{in Thousands}}\) \$37,000 Design and developme \$1,787 Ground and flight test \$38,787 Total	ds) Design and development of repl Ground and flight test Total	olacement software	ıftware							
9	B. Project Change Summary New start project beginning FY00.										
Ω.	Project 674810			Page 1	Page 11 of 20 Pages	es			Ж	hibit R-2A (Exhibit R-2A (PE 0101113F)

PERUMER AND TITLE PROJECT ACTIVITY PROJECT PROJECT ACTIVITY PROJECT PR		RDT&E BUDGET ITEM J	JUSTIFIC	ATION (ITEM JUSTIFICATION SHEET (R-2A Exhibit)	-2A Exh	libit)	à	DATE February 2000	y 2000
C. Other Program Funding Summary C Sin Thousands Estimate Es	8UD 07	юет аститт - Operational System Development			PE NUMBER / 0101113F	AND TITLE B-52 SQ	UADRONS			PROJECT 674810
AF RDT&E One APPN AP RDT&E One Appn National Procurement One Acquisition Strates One Appn National Procurement One Appn National Procurement of the Flight Management System and the Storest National Procurement will contract with these vendors for product hardware to support the aircraft installations. EX PATION The Government will contract with these vendors for product hardware to support the aircraft installations. EX PATION The Government will contract with these vendors for product hardware to support the aircraft installation. EX PATION The Government will contract with these vendors for product hardware for use during EMD. The Government will contract with these vendors for product hardware for use during EMD. The Government will contract with these vendors for product hardware for use during EMD. The Government will contract with these vendors for product for the Flight Management System and the Society of the Flight Management System and the Society of the Flight Test from the Program Office Support FY 2000 Tracton Trac	9	C. Other Program Funding Summary (\$ in Tho EY 1999 J	Susands) EY 2000 Estimate	EY 2001.	FY 2002 Estimate	FY 2003 Estimate	EY 2004 Estimate	FY 2005 Estimate	Cost to	Total Cost
D. Acquisition Strategy The AMI program will contract with Boeing Wichita for aircraft hardware integration and software development of the Flight Management Overlays. Specific vendors will be selected to provide hardware for use during EMD. The Government will contract with hardware to support the aircraft installations. E. Schedule Profile 1 2 3 4 1 2 3 4 Contract Award Interface Development Software Development Software Development Test Planning Group A Fabrication Traft Install Flight Test Program Office Support Program Office Support Page 12 of 20 Pages	999	urement		Anning	0	22,808	14,513	15,624	1,600	81,384
E. Schedule Profile FY 1999 FY 2000 Contract Award 1 2 3 4 1 2 3 4 Contract Award Interface Development X	9		ita for aircrafi elected to pro	t hardware inte vide hardware	egration and sc	oftware devek ; EMD. The (opment of the F	light Manage Il contract wii	ment System and th these vendors f	the Stores or production
Contract Award X Program Office Support X X Project 674810 Page 12 of 20 Pages Y Project 674810 Page 12 of 20 Pages Y	9			-	Y 199	4	$\frac{\text{FY 2}}{1}$		1 EX	
Page 12 of 20 Pages	<u> </u>	Contract Award Interface Development Software Development Test Planning Group A Design Group A Fabrication Trial Install Flight Test Program Office Support					****	×××	* **	
	ц.	² roject 674810		Page	12 of 20 Pages	:			Exhibit R-2A (F	PE 0101113F)

	RDT&E PROGRAM ELEMENT	RAM ELE	MENT/PF	/PROJECT C	OST BF	COST BREAKDOWN (R-3)	WN (R-3)		DATE Fe	February 2000	8
8UD 07	вирсет астилту 07 - Operational System Development	evelopme	nt		PE NUMBER AN 0101113F	PE NUMBER AND TITLE 0101113F B-52 St	4D TITLE B-52 SQUADRONS	NS SN		9	PROJECT 674810
<u>(</u>	A. Project Cost Breakdown (\$ in Thousands)	S in Thousan	<u>1</u> 8)				1 73	000	000 /81		100 XI
9	Prototype Hardware						0	33 °	4,500	a o	0
93	Non-recurring Engineering Ground/Flight Test								23,955	10.0	28,490
33	System Program Office Support Miscellaneous Cuts	Ę							1,000 -422		1,000
9	Total							0	29,033	3	38,787
9	B. Budget Acquisition History and Planning Information (\$ in Thousands)	y and Plannin	g Information	(S in Thousand	ন্ত্র						
9	Performing Organizations:										
	Leg.	Contract									
	<u>Government</u> Performing	Method/1ype or Funding	Award or Obligation	<u>Performing</u> Activity	Project Office	Total Prior	Budget	Budget	Budget	Budget to	Total
		Vehicle	Date	EAC	EAC	to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
	Product Development Organizations	ations .								ı	
	Boeing, McDonnell Defense TBD	TBD	FY00	TBD				27,963	32,727	54,460	115,150
	Support and Management Organizations	nizations									
	OC-ALC/LH	PMA	Oct 99	0	TBD			1,000	1,000	2,000	4,000
		AF616	TBD	TBD				30	30	09	120
	HQ ACC/DRPB	AF616	TBD	TBD				30	30	09	120
	valuation Organizat	suo									
	419 FLTS	Project Order	TBD	TBD				10	5,000	10,000	15,010
	Subtotals					Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
	Subtotal Product Development							27,963	32,727	54,460	115,150
	Subtotal Support and Management	ıent						1,060	1,060	2,120	4,240
	Subtotal Test and Evaluation							10	2,000	10,000	15,010
	Total Project							29,033	38,787	66,580	134,400
											,
ᇿ	Project 674810			Page	Page 13 of 20 Pages	ges			Exhibil	Exhibit R-3 (PE 0101113F)	01113F)

	RDT&E	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	STIFICA	ATION &	SHEET	(R-2A E	xhibit)		DATE	February 2000	y 2000
80DC 07	вирсет астіvіту 07 - Operational Sys i	оет астіvіту - Operational System Development			PE NUMBER AN 0101113F		40 TITLE B-52 SQUADRONS	SONS			PROJECT 674875
	COST (\$ in	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
674875		Situational Awareness Defensive Improvement	0	7,956	12,000	17,500	0	0	0	0	71,690
SAD	SADI begins as FY00 New Start.	start. As of 1 Jan 00 program underfunded by \$115 million through FY09	ınderfunded	by \$115 mi	llion throug	h FY09					
<u> </u>	A. Mission Description The existing ALR-20A s frequency (RF) transmis	A. Mission Description The existing ALR-20A system provides the Electronic Warfare Officer (EWO) with the capability of simultaneously surveying, detecting, and displaying all radio frequency (RF) transmissions within its frequency range of coverage. It displays the detected signals in a spectrum analyzer like presentation (i.e., in an amplitude	c Warfare C ige of cover	fficer (EWC age. It displ)) with the cays the determinant	apability of cted signals	simultaneou in a spectrur	ısly surveyir m analyzer l	ig, detecting, ike presentat	, and displayi tion (i.e., in a	ng all radio n amplitude
	versus frequency form used for providing earl jamming) of the follow	versus frequency format) to the EWO on a multi-trace cathode ray tube (CRT). The ALR-20A provides the EWO with two (2) capabilities. First, it is the main receiv used for providing early warning and situational awareness. Second, the analog signals displayed by the ALR-20A are required for the successful employment (i.e., jamming) of the following electronic countermeasures (ECM) systems: ALQ-122/ALQ-16A, ALT-32s, and all ALQ-155(V) systems. The present ALR-20A system	e cathode ra eness. Seco s (ECM) sys	y tube (CRT ind, the anal- items: ALQ). The ALR og signals d	:-20A provic isplayed by 1 16A, ALT-3;	les the EWC the ALR-20. 2s, and all A	with two (2) A are requir LQ-155(V)	capabilitie<l< td=""><td>es. First, it is ccessful emp ae present AI</td><td>cathode ray tube (CRT). The ALR-20A provides the EWO with two (2) capabilities. First, it is the main receiver mess. Second, the analog signals displayed by the ALR-20A are required for the successful employment (i.e., (ECM) systems. ALQ-122/ALQ-16A, ALT-32s, and all ALQ-155(V) systems. The present ALR-20A system</td></l<>	es. First, it is ccessful emp ae present AI	cathode ray tube (CRT). The ALR-20A provides the EWO with two (2) capabilities. First, it is the main receiver mess. Second, the analog signals displayed by the ALR-20A are required for the successful employment (i.e., (ECM) systems. ALQ-122/ALQ-16A, ALT-32s, and all ALQ-155(V) systems. The present ALR-20A system
	was designed in the 19 Panoramic receiver sys million through FY09	was designed in the 1960's and is becoming increasingly unsupportable due to vanishing vendors and obsolete technology. SADI removes and replaces the ALR-20A Panoramic receiver system. Includes Group B System and Group A Integrator Kit. SADI begins as FY00 New Start. As of 1 Jan 00 program underfunded by \$115 million through FY09	gly unsuppo	rtable due to A Integrator	vanishing r Kit. SADI	vendors and begins as F	obsolete tec Y00 New St	hnology. Szart. As of 1	ADI remove: Jan 00 prog	s and replace gram underfu	ly unsupportable due to vanishing vendors and obsolete technology. SADI removes and replaces the ALR-20A and Group A Integrator Kit. SADI begins as FY00 New Start. As of 1 Jan 00 program underfunded by \$115
999	FY 1999 (\$ in Thousands) \$0 No \$0 Tot	<u>ads)</u> No Activity Total									
5555	FY 2000 (\$ in Thousands) \$6,000 Gro \$1,000 Soft	nds) Group A (antennas) NRE, Group B (LRUs) NRE Software Program Management	up B (LRUs) NRE							
39	,	Total									
9	FY 2001 (\$ in Thousands)	(spi									
<u> </u>	\$3,000 \$3,700	Group A kit and NRE Group B kit and NRE									
3	\$3,600	Software									
99	\$1,700	Program Management Total									
)											
п	Project 674875			Page 1	Page 14 of 20 Pages	es			Δ̈́	chibit R-2A (Exhibit R-2A (PE 0101113F)
					1000						

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	FIFICATION	SHEET (F	3-2A Exh	libit)	Ğ	DATE Februs	February 2000
8UC 07	вирсет астіvіту 07 - Operational System Development		PE NUMBER AND TITLE 0101113F B-52	AND TITLE F B-52 SQ	ID TITLE B-52 SQUADRONS	1		PROJECT 674875
(D)	B. Project Change Summary SADI begins as FY00 New Start. As of 1 Jan 00 program underfunded by \$115 million through FY09	1 underfunded by \$	115 million thro	ugh FY09				
9	C. Other Program Funding Summary (\$ in Tho FY 1999 Actual		FY 2002	FY 2003	FY 2004	FY 2005	Cost to	Total Cost
99	Actual Estim AF RDT&E Other APPN N/A	are Estimate 0	Estimate 0 0	Estimate 0	Estimate 0	Estimate 0	Complete	
<u> </u>	D. Acquisition Strategy The present ALR-20A system was designed in the 1960 replace the ALR-20A and ALR-46 RWR. The SADI pr provide hardware for use during EMD. The Governmen	's and is unsupportable due to vanashing vendors and obsolete technology. The SADI program will remove and ogram will contract with Boeing Wichita for aircraft hardware integration. Specific vendors will be selected to it will contract with these vendors for production hardware to support the aircraft installations.	ole due to vanas with Boeing Wi hese vendors fo	hing vendors sichita for airch r production h	and obsolete ter aft hardware in aardware to sup	chnology. The regration. Spo sport the aircra	e SADI progran ecific vendors v aft installations.	n will remove ar vill be selected to
<u> </u>	E. Schedule Profile	-	FY 1999 2 3	4	$\frac{\text{FY} 2000}{1}$.000 3	1 2 E	FY 2001 2 3 4
293939393	Contract Award Interface Developement Test Planning Group A Design Group B Pesign Group B Fabrication Group B Fabrication OT (2 Qtr FY 02) OT (2 Qtr FY 03) Program Office Support	•		•		× × × × ×	•	· × ×
Ц	Project 674875	Page	Page 15 of 20 Pages				Exhibit R-2A	Exhibit R-2A (PE 0101113F)

	RDT&E PROGRAM ELEMENT	RAM ELE		I/PROJECT C	COST BREAKDOWN (R-3)	AKDOW	N (R-3)		DATE Fe l	February 2000	·
BUE 07	вирсет астилту 07 - Operational System Development	evelopme	nt		PE NUMBER AND TITLE 0101113F B-52		ID TITLE B-52 SQUADRONS	ဋ		PR 67	РРОЈЕСТ 674875
<u>(2)</u>	A. Project Cost Breakdown (\$ in Thousands)	(\$ in Thousan	18)				FV 1000	00	FV 2000		FV 2001
9	Hardware							3	6,000	O	6,700
3	Software								1,000		3,600
<u> </u>	Program management Total								956 7,956		1,700
9	B. Budget Acquisition History and Planning Information (\$ in Thousands)	y and Plannin	g Informatio	n (\$ in Thousanc	ds)						
9	Performing Organizations:										
	₩	Contract									
	<u>Government</u>	Method/1ype	Award or Obligation	Performing Activity	Project Office To	Total Drior	Rudget	Rudget	Rudget	Budget to	Total
		Vehicle	Date	EAC	-•	to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
	Product Development Organizations Roeing Military Programs TRD	<u>ations</u> TRD	00 an	TRD				7.430	11 250	44 540	63 220
		771						20,4	007,11	2	277,00
	Support and Management Organizations	anizations									
	LH	PMA	Jun 00	TBD				200	700	1,134	2,334
		TBD						10	20	30	9
	HQ ACC/XRA-52	TBD						10	70	30	09
	Test and Evaluation Organizations 419 FLTS	ions TBD						9	10	6,000	6,016
9	Government Furnished Property:	erty:									
		Contract	*** V								
	Item 6	or Funding	Obligation	Delivery	Ħ	Total Prior	Budget	Budget	Budget	Budget to	Total
	ription	Vehicle	Date	Date	헠	to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
	Product Development Property Support and Management Property	l. serts									
	Test and Evaluation Property										
	Project 674875			Page	Page 16 of 20 Pages				Exhibit	Exhibit R-3 (PE 0101113F)	1113F)
					•						

RDT&E PROGRAM ELEMENT/PROJECT	T/PROJECT COST BREAKDOWN (R-3)	VN (R-3)		DATE Fe l	February 2000	
BUDGET ACTIVITY O7 - Operational System Development	PE NUMBER AND TITLE 0101113F B-52 SQUADRONS	QUADRON	IS		ä . 9	PROJECT 674875
Subtotals Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 1999	Budget FY 1999	Budget EY 2000 7,430 520 6 7,956	Budget FY 2001 11,250 740 10 12,000	Budget to Complete 44,540 1,194 6,000 51,734	Total Program 63,220 2,454 6,016 71,690
Project 674875	Page 17 of 20 Pages			Exhibit	Exhibit R-3 (PE 0101113F)	1113F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	USTIFIC	ATION 8	SHEET (R-2A E	xhibit)		DATE		February 2000
B008 07 -	вирсет астилту 07 - Operational System Development			PE NUMBEF 0101113	PE NUMBER AND TITLE 0101113F B-52 S	PE NUMBER AND TITLE 0101113F B-52 SQUADRONS	ONS			PROJECT 674876
	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
674876	6 B-52 Global Air Traffic Management (GATM))	0 0	0	0	0	9,678	24,141	Continuing	TBD
(J)	A. Mission Description Develop and install integrated Communication, Navigation, Surveillance and Air Traffic Management capability to guarantee unrestricted access to global air traffic operations in response to International Civil Aviation Organization (ICAO) and Federal Aviation Administration (FAA) requirements. Avionics upgrades will result reduced airspace congestion, increased safety, and significant savings through more efficient flight routes and altitudes. This program is not executable under the current funding. There is significant concurrency in FY05/06 and the production funding is not adequate to modify 76 aircraff.	vigation, Sur on Organizat significant ss in FY05/06 a	veillance and ion (ICAO) a vings throug	I Air Traffic I ind Federal A ih more effici ction funding	Management viation Adn ent flight rou is not adequ	t capability t ninistration (nes and altit ate to modif	o guarantee (FAA) requi udes. This	unrestrictec rements. A program is 1	l access to glu vionics upgre not executabl	ation, Surveillance and Air Traffic Management capability to guarantee unrestricted access to global air traffic Organization (ICAO) and Federal Aviation Administration (FAA) requirements. Avionics upgrades will result in nificant savings through more efficient flight routes and altitudes. This program is not executable under the Y05/06 and the production funding is not adequate to modify 76 aircraft.
999	FY 1999 (\$ in Thousands) \$0 No Activity \$0 Total									
555	FY 2000 (\$ in Thousands) \$0 No Activity \$0 Total									
999	FY 2001 (\$ in Thousands) \$0 No Activity \$0 Total									
9	B. Project Change Summary									
<u>e</u>	of The	ousands) FY 2000	FY 2001	FY 2002	FY 2003			FY 2005	Cost to	Total Cost
99	Actual I AF RDT&E Other APPN	Estimate	Estimate	Estimate	Estimate	Estimate		Estimate	Complete	
P	Project 674876		Page	Page 18 of 20 Pages	SS			ú	xhibit R-2A (Exhibit R-2A (PE 0101113F)

PENUMEER AND THE BURGED ACTIVITY OF COPERATION System Development (D) LAcquistion Strategy Develop and tastell integrated Communication, Navigation, Surveillance and Air Traffic Management capability to guarantee unrestricted access to global air traffic. Develop and traffic Management capability to guarantee unrestricted access to global air traffic. Observations in tragenistion Organization Organizat		RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	V SHEET (R-2A	Exhibit		DATE		February 2000	00	
	8UD 07 .	эЕТ АСТІVITY Operational System Development	PE NUMBER AND TITL 0101113F B-52	E SQUAD	RONS				РРОЈЕСТ 674876	ે 6
E. Schedule Profile FY 1999 FY 2000 Contract Award est 2QTR FY04 1 2 3 4 1 2 3 Contract Award est 2QTR FY04	(D)	D. Acquisition Strategy Develop and install integrated Communication, Navigation, Surveillance a operations in response to International Civil Aviation Organization (ICAO contract with Boeing Wichita for aircraft hardware integration and softwar The Government will contract with these vendors for production hardware funding. There is significant concurrency in FY05/06 and the production in the concurrency of the production in the concurrency of t	nd Air Traffic Managemel) and Federal Aviation Ad e developement. Specific to support the aircraft inst unding is not adequate to	nt capability iministration venders wi allations. 7	y to guarantee n (FAA) requi ll be selected This program i	unrestricte irements. To provide is not fully	ed access: The B-52 hardware executabl	to global aii GATM pro for use dur	r traffic gram wi ing EMI	III (j
2 3 4 1 2 3 Contract Award est 2QTR FY04	<u>(</u>	E. Schedule Profile	FY 1999		FY 2000			FY 2001	- 4	
	<u>(</u>	I Contract Award est 2QTR FY04	ю	1		4	-	6	m	4
Project 674876 Pages 19 of 20 Pages Exhibit R	Ъ		ge 19 of 20 Pages				Exhibit R	Exhibit R-2A (PE 0101113F)	101113	(j.

RDT&E PROGRAM ELEMENT	1T/PROJECT COST BREAKDOWN (R-3)	DATE Fel	February 2000	0
BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0101113F B-52 SQUADRONS		.9 6	РРОЈЕСТ 674876
(U) A. Project Cost Breakdown (\$ in Thousands)	FV 1099	FY 2000	ے	FV 2001
(U) Total			э	1002
Subtotal Product Development Subtotal Support and Management	Total Prior Budget Budget Budget to FY 1999 FY 2000	2ct Budget 00 FY 2001	Budget to Complete	Total Program
Subtrail Project				TBD
Project 674876	Page 20 of 20 Pages	Exhibit	Exhibit R-3 (PE 0101113F)	1113F)

	RDT&E BUDGET ITEM JI	USTIFIC	ATION	USTIFICATION SHEET (R-2 Exhibit)	(R-2 Ex	thibit)		DATE	Februa	February 2000
BUDC 07 -	вирсет астилту 07 - Operational System Development			PE NUMBER AI 0101120F		மா⊓E Advanced Cruise Missile	ise Miss	ie ie		PROJECT 674798
	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
674798	38 Life Extension Study	0	0	4,182	972	776	677	580	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0
((a)	A. Mission Description The Advanced Cruise Missile (ACM) is a low-observable air-launched, strategic missile with significant improvements over the Air Launched Cruise Missile B version (ALCM-B) in range, accuracy, and survivability. Armed with a W80 warhead, it is designed to evade air and ground-based defenses in order to strike heavily defended, hardened targets at any location within any enemy's territory. An ACM Service Life Extension Plan (SLEP) was developed to meet an AF Long Range Plan requirement to extend ACM service life to FY30. The ACM is designed for B-52H external carriage. Missile procurement is complete. The ACM fleet design service life expires between the years 2003 and 2008. The results of Service Life Extension Program (SLEP) studies will identify those components that cannot be sustained beyond the normal service life. This was reported in FY00 President's Budget (PB) as a New Start Program, but was deferred to FY01.	'able air-laum med with a V erritory. An ssigned for B vice Life Ex dent's Budge	nched, strate W80 warhea ACM Servi -52H extern tension Prog	egic missile v d, it is design ice Life Exte nal carriage. gram (SLEP) New Start Pr	vith significated to evade ned to evade nsion Plan (Missile processitudies will ogram, but v	ant improver air and grou SLEP) was o curement is o identify tho	nents over t und-based dd developed tc complete. T se compone to FY01.	he Air Laum efenses in or o meet an AI he ACM fle nts that canr	ched Cruise der to strike Long Rang et design ser not be sustair	Missile B version heavily defended, e Plan requirement vice life expires red beyond the
999	FY 1999 (\$ in Thousands) \$0 No Activity \$0 Total									
999	FY 2000 (\$\\$\) in Thousands) \$0 No Activity \$0 Total									
99	EY 2001 (\$ in Thousands) \$750 Research/evaluate ACM components for age sensitivities. Research and develop modifications to existing Sensor components.	onents for a	ge sensitivit	ies. Researc	h and develo	op modificat	ions to exist	ing Sensor c	omponents.	Research and
<u>9</u> 9	\$962 Develop process to rebuild composite structures and evaluate new Radar Cross Section (RCS) \$2,470 Design special tooling and prototype support equipment for new/rebuilt composite structures. Develop Test and Evaluation criteria for	mposite structotype suppo	tures and every cut equipment	age sensitivity valuate new] nt for new/re	Radar Cross built compo	Section (RC site structure	ponents. SS) ss. Develop	Test and Ev	'aluation crit	eria for
<u>(3</u>	\$4,182	es, develop	ord (second)	n ioi compo	stung mewin			ċ		
	0.000		ć	1 of 6 m				L	י כ ם יי ולילי	C. L. I. I. D. 7 (DE 0404490E)
1			rage	rage 1 01 3 rages		-			י אייווטוו איי	re utulizur)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SET ITE	M JUSTIF	CATION	I SHEET ((R-2 Exhi	bit)	L	DATE February 2000	y 2000
BUD(07.	вирсет астилту 07 - Operational System Development	relopment			PE NUMBER AND TITLE 0101120F Adval		וס דודרם Advanced Cruise Missile	Missile		PROJECT 674798
9	B. Budget Activity Justification These programs are in budget activity 7, Operational System Development. ACM has completed procurement, is fielded, and is undergoing modification to extend missile service life. AF Long Range Plan requires ACM to extend beyond design life (2003-2008). Service Life Extension Program (SLEP) requires studies to determine what components can be sustained or need to be replaced to extend life to 2030.	ivity 7, Opera 1ge Plan requ 1e sustained o	tional System ires ACM to ex r need to be re	Development. tend beyond o	ACM has com lesign life (200 d life to 2030.	pleted procure 3-2008). Servi	rment, is fielde ice Life Exten	ed, and is unde sion Program	ergoing modificatic (SLEP) requires st	on to extend tudies to
9	C. Program Change Summary (\$ in Thousands)	(\$ in Thousa	(spu			EV 1000	EV 2000		EV 2001	Total Cost
33	Previous President's Budget (FY 2000 PBR) Appropriated Value	2000 PBR)				0	0		785	TBD
<u> </u>	Adjustments to Appropriated Value a. Congressional/General Reductions b. Small Business Innovative Research	ue ions earch								
	c. Omnibus or Other Above Threshold Reprogram d. Below Threshold Reprogram	shold Reprog	ram							
59	e. Rescissions f. Other Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR	ce FY 2000 F PBR	BR				00	0 0	3,397 4,182	TBD
3 (3	Significant Program Changes: Since funding for FY 2000 was reduced to zero, program start was deferred until FY 2001. New program start is based on AF Long Range Plan decision to maintain ACM beyond design life. The results of SLEP are required to determine other actions on critical components. The funding plus-up of \$3.397 in FY2001 is for development associated with the process of rebuilding composite structures and the evaluation of radar cross sections, and the design of special tooling and support	educed to zero sults of SLEI process of reburt com	o, program star or are required t milding compo	t was deferred o determine ot site structures	until FY 2001. her actions on a	New progran critical compoi iion of radar cr	1 start is based nents. The fu	on AF Long mding plus-ug nd the design	Range Plan decisio	
<u> </u>	D. Other Program Funding Summary (\$ in Thousands) FY 1999 FY 2000	mary (\$ in T FY 1999	Chousands) EY 2000	. —	FY 2002	FY 2003	EX 2004	FY 2005	Cost to	Total Cost
99	Missile Procurement, AF Aeronatical Vehicle (BA2,	Actual 1,395	Estimate 1,039	Estimate 2,006	Estimate 2,022	Estimate 2,038	<u>Estimate</u> 2,031	<u>Estimate</u> 2,156	Continuing	
<u> </u>	FE 11120F, F-1#2) Missile Modifications (BA3,	0	2,920	0	3,777	4,050	4,324	4,510	Continuing	Continuing
۵.	Project 674798			Pag	Page 2 of 5 Pages				Exhibit R-2 (F	Exhibit R-2 (PE 0101120F)

	RDT&E BUDGET ITEM JU		CATION	STIFICATION SHEET (R-2 Exhibit)	R-2 Exhi	ibit)		DATE Februa	February 2000	
BUD 07	BUDGET ACTIVITY O7 - Operational System Development			PE NUMBER AND TITLE 0101120F Advan		ID TITLE Advanced Cruise Missile	Missile		PROJECT 674798	_⊢ ∞
(£)	D. Other Program Funding Summary (\$ in Thousands) FY 1999 FY 2000 Actual Estimate	Chousands) FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	EY 2005 Estimate	Cost to Complete	Total Cost	Cost
9		315	321	330	347	355	365	Continuing	T	TBD
<u>(</u>	(BA4, FE 11120F, F-4#17) Mod Initial Spares (BA4, PE 0 11120F, P-1#17)	0	1,942	2,307	2,620	2,930	618	Continuing	T	ТВD
9	E. Acquisition Strategy Development will be through the prime contractor, Raytheon. Contract is Time and Materials. Contract number: F34601-96-0775.	tor, Raytheon.	Contract is Tii	ung as of 1150 me and Materia	ds. Contract r	11mber: F3460	1-96-0775.			
9	E. Schedule Profile		П	FY 1999 2 3	4	$\frac{\text{FY } 2000}{1}$	2000 3 4	1 2 E	FY 2001 2 3 ,	4
<u> </u>	Replacement Component Development Contract Award Engineering Investigation PDR CDR (2nd Qtr FY02) FQT (4th Qtr FY02) Test & Evaluation (1st Qtr FY03)							×	×	××
ம	Project 674798		Pag	Page 3 of 5 Pages				Exhibit R-2 (Exhibit R-2 (PE 0101120F)	Œ
										1

	RDT&E PROGRAM ELEMENT		I/PROJECT COST BREAKDOWN (R-3)	OST BF	3EAKDOV	WN (R-3)		DATE Fe	February 2000	g
8UD(07	вирсет астииту 07 - Operational System Development	opment		PE NUMBER AN 0101120F		וס דודוב Advanced Cruise Missile	e Missile		. 9	PROJECT 674798
9	A. Project Cost Breakdown (\$ in Thousands)	(ponsands)				FV 1	000	000	۶	1000 AE
9	Research/evaluate ACM components for age sensitivities. Research and develop modifications to existing Sensor components. Research and develop Automated Test Equipment (ATE) to support	s for age sensitivities rch and develop Aut	s. Research and devomated Test Equip	velop modifi	cations to	0	3 O	0	3 0	750
99	age sensitivity testing of Sensor components Develop process to rebuild composite structures and evaluate new Radar Cross Section Design special tooling and prototype support equipment for new/rebuilt composite structures.	ponents e structures and eval support equipment	uate new Radar Cr. for new/rebuilt con	oss Section sposite struct	tures.		0	-	0	962
9	Develop Test and Evantation Chiefra for new reonin composite structures, develop process/procedures for testing new/rebuilt composite structures Total	tot new/tebuilt com ebuilt composite stru	iposite su uctures, d ictures	doraca			0	3	0	4,182
9	B. Budget Acquisition History and Planning Information (\$ in Thousands)	Planning Informat	ion (\$ in Thousan	ds)						
9	Performing Organizations: Contract Government Method/Ty Performing or Funding Activity Vehicle	Contract Method/Type Award or or Funding Obligation Vehicle Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
	Raytheon SS/CPT&M Support and Management Organizations N/A Test and Evaluation Organizations	T&M Jan 01 ons	4,182	4,182	0	0	0	4,182	Continuing	TBD
ව්	Overnment Furnished Property: Contract Contract Method/Ty Item Or Funding Description Vehicle Product Development Property Support and Management Property	verty: Contract Method/Type Award or or Funding Obligation Vehicle Date	<u>Delivery</u> <u>Date</u>		Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	<u>Total</u> Program
٩	Project 674798		Pag	Page 4 of 5 Pages	ės			Exhibi	Exhibit R-3 (PE 0101120F)	1120F)

RDT&E PROGRAM ELEMENT/PROJECT	ECT COST BREAKDOWN (R-3)	NN (R-3)		DATE Fe	February 2000	0
вирвет астилту 07 - Operational System Development	PE NUMBER AND TITLE 0101120F Advance	мотпте Advanced Cruise Missile	Aissile		PR 67	PROJECT 674798
(U) Government Furnished Property Continued: Test and Evaluation Property None						
Subtotals Subtotal Product Development Subtotal Sumort and Management	Total Prior to FY 1999	Budget FY 1999 E	<u>Budget</u> FY 2000 0	Budget FY 2001 4,182	Budget to Complete TBD	Total Program TBD
Subtotal Test and Evaluation Total Project	0	0	0	4,182	TBD	TBD
Project 674798	Page 5 of 5 Pages			Exhibit	Exhibit R-3 (PE 0101120F)	1120F)

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Perceion		RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	USTIFIC	ATION	SHEET	(R-2 Ex	thibit)		DATE	Februa	February 2000
66 40.1.00 1.1.	BUD 07 .	GET ACTIVITY - Operational System Development			PE NUMBER 0101122	RAND TITLE	unched (Cruise M	lissile		PROJECT 674797
767		COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
4011001100110011	6747		0	5,281	6,457	6,353	5,333	0	0	Continuing	TBD
		Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0
EY 1999 (\$ in Thousar \$0 \$0 EY 2000 (\$ in Thousar \$2,700 \$2,109 \$5,281	9	A. Mission Description (U) The Air Launched Cruise Missile (ALCM) AGM is designed to evade air and ground-based defenses in external carriage. Missile procurement is complete. extend ALCM Service Life to FY30. Initial SLEP as. Instrumentation Kit (CATIK) payload doors, replacer and software. This was an ALCM new start program ourrent design life. CATIK flight test payload doors, safety requirements and lack of current payload door has been identified as the ALCM item with largest nu	4-86B is a sun order to str. An ALCM ? ssessment recement of curr reported in t reported in t containing 1 assets. The	bsonic, air-t ike targets a service Life quires acquis ent obsolete he FY00 Pre ange transpe current navi cheduled ma	o-surface str tr any locatio Extension P sition of new navigation s esident's Buc onder and ba igation syster aintenance h	ategic nucle an within any lan (SLEP) v Conventior system, and r lget (PB), ba uttery, are red m has parts v ours.	ar missile, op / enemy's ter was develop nal Air Laum replacement issed on the d quired to be without spare	perational si ritory. The ed to meet a ched Cruise of Operation lecision to m replaced, du	ALCM is de n AF Long Missile/Air nal Test & E naintain this te to Departrers, and that	Armed with a signed for B Range Plan Launched Cl valuation (O weapon system of Energare becoming	W80 warhead, it requirement to ruise Missile Test T&E) hardware em beyond its gy (DOE) range g obsolete, and
FY 2000 (\$ in Thousar \$2,700 \$472 \$2,109 \$5,281	933	1999 (\$ in Thousar									
	55 555	0 (\$ in Thousar	ace Design/E g/Integration (INE) Card I	evelopment and Data Co Sevelopmen	t, Operationa ollection/Do .t, Start Nucl	ıl Flight/Flig cumentation ear Certifica	tht Terminati	ion Software , Operationa	: Developme Il Flight Soff	ent, and Auto	omated Test opment
Project 674797 Pages 1 of 7 Pages	<u> </u>	1 roject 674797		Page	1 of 7 Pages				Ш	exhibit R-2 (Exhibit R-2 (PE 0101122F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SHEET (R-2 Exhibit	(1)	DATE February 2000	2000
900 07	BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0101122F Air Launch	மார் Air Launched Cruise Missile	sile	PROJECT 674797
9	A. Mission Description Continued				
99	FY 2001 (\$ in Thousands) \$1,857 - Finalize CATIK payload door Interface Design/Do	Interface Design/Development, Operational Flight/Flight Termination Software Development, Automated Test	ight Termination So	oftware Development, Au	tomated Test
999	\$201 - INE Operational Flight Software Development Testing, Testing and Integration for INE. \$4,399 - Continue Card Development, Operational Flight Software Development, and Nuclear Certification for the INE. \$6,457 Total	ting, Testing and Integration for II ftware Development, and Nuclear	NE. r Certification for th	e INE.	
9	B. Budget Activity Justification These programs are in budget activity 7, Operational System Development. ALCM has completed procurement, is fielded, and is undergoing modification to extend its Service Life.	ALCM has completed procurem	ent, is fielded, and is	s undergoing modificatio	n to extend its
9	C. Program Change Summary (\$ in Thousands)	EV 1000	EV 2000	EV 2001	Total Cont
555	Previous President's Budget (FY 2000 PBR) Appropriated Value Adjustments to Appropriated Value	0	5,344 5,344	6,514	TBD
	a. Congressional/General Reductions b. Small Business Innovative Research c. Omnibus or Other Above Threshold Reprogram		-29		
	d. Below Inreshold Reprogram e. Rescissions f. Other		-34		
99	Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR	0	5,281	-57 6,457	TBD
5	Significant Program Changes: FY01 adjustment funded other AF priorities				_
Δ.	Project 674797	Page 2 of 7 Pages		Exhibit R-2 (PE 0101122F)	:0101122F)

	RDT&E BUDGET ITEM JU	GET ITE		CATION	STIFICATION SHEET (R-2 Exhibit)	(R-2 Exhi	bit)	<u></u>	DATE Februa l	February 2000
800 07	вирсет астилту 07 - Operational System Development	velopment			PE NUMBER AND TITLE 0101122F Air La		ю тисе Air Launched Cruise Missile	se Missile		PROJECT 674797
(£)	D. Other Program Funding Summary (\$ in Thousands) FY 1999 FY 2000 Actual Estimate	mmary (\$ in T FY 1999 Actual	Thousands) EY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	Extimate	Cost to Complete	Total Cost
33	Missile Procurement, AF Missile Modifications	0		4,066	8,650	14,991	23,403	23,847	27,232	102,189
9	(BA 3, PE 11122F, P-1#14) Replenishment + Spares/Spare Parts (BA 4, PE	92	213	255	255	261	266	272	Continuing	TBD
<u> </u>	11122F, P-1#17) Modification Initial Spares	0	0	0	0	1,582	1,736	182	Continuing	TBD
<u>(2</u>	Other Procurement (BP83) Electronics and	1,185	1,297	1,311	1,323	1,324	1,352	1,377	Continuing	TBD
	Telecommunications Equipment (BA 3, PE 11122F, P-1#51)									
9	E. Acquisition Strategy ALCM will use Boeing on a Sole Source contract for the SLEP MOD development and production. Engineering Assignments will be used for CATIK development and Cost Plus Incentive Fee contract type will be used for all SLEP MOD production and INE development. CATIK development will start in the 2nd quarter of FY00 with production contract award in May FY01. INE development contract award will be June FY00 and production contract award to be May FY01.	Source contra type will be us y FY01. INE of	ct for the SLE ed for all SLEI evelopment co	P MOD develo MOD produc	opment and pro stion and INE c	duction. Engi levelopment. 0	neering Assigr CATIK develo tion contract a	uments will be pment will sta	t used for CATIK art in the 2nd quar ay FY03.	development and rter of FY00 with
3	F. Schedule Profile			•	Y 199		EK		国 ,	
999	CATIK Milestones PDR			-		4	- ×	بر 4 پ	1 2	٤ 4
333	CDR INE Milestones PDR							< ×		
99	CDR Contract Milestones- Development	nt							×	
(L	Project 674797			Рае	Page 3 of 7 Pages				Exhibit R-2 (Exhibit R-2 (PE 0101122F)

RDT&E BUDGET ITEM JUSTIFICATION	STIFICATION SHEET (R-2 Exhibit)	DATE February 2000
вирсет астилту 07 - Operational System Development	PENUMBER AND TITLE 0101122F Air Launched Cruise Missile	
(U) E. Schedule Profile Continued	EX 1999	FY 2001
(U) Contract Award - CATIK (U) Contract Award - INE (U) Contract Award - CATIK (U) Contract Award - CATIK (U) Contract Award - INE (3rd qtr FY03)	2 3 4 1 2 3 4	
Project 674797	Page 4 of 7 Pages	Exhibit R-2 (PE 0101122F)

	RDT&E PROGRAM ELEMENT/PROJECT (COST BREAKDOWN (R-3)		DATE February 2000	, 2000
BUC 07	вирсет астилту 07 - Operational System Development	PE NUMBER AND TITLE 0101122F Air Launchec	D TITLE Air Launched Cruise Missile	0	PROJECT 674797
9	A. Project Cost Breakdown (\$ in Thousands)		FV 1000	0000	EV 2001
5	CATIK:		1722	F.1. 4000	T T TOOL
3	Hardware Development				
9	Interface Development		0	1,270	407
9	Testing/Integration		0	100	100
9	Software Development				
5	Operational Flight Software		0	068	785
9	Automated Test Equipment Development		0	444	423
9	Testing/Integration		0	252	142
9	Data Collection/Documentation		0	216	0
9					
3	INE:				
9	Hardware Development				
9	Card Development		0	328	1,431
9	Nuclear Certification		0	221	205
9	Testing/Integration		0	0	212
9	Software Development				
9	Operational Flight Software		0	1,403	2,654
9	Nuclear Certification		0	144	0
9	Automated Test Equipment Development		0	0	0
9	Mission Planning		0	0	0
9	Testing/Integration		0	0	81
9	Flight Testing		0	13	17
9	Data Collection/Documentation		0	0	0
3	Total		0	5,281	6,457
9	B. Budget Acquisition History and Planning Information (\$ in Thousands)	(sp)			
3	Performing Organizations:				
	Project 674797	Page 5 of 7 Pages		Exhibit R-3 (PE 0101122F)	E 0101122F)
	THE REPORT OF THE PARTY OF THE				

	RDT&F PROGRAM FI FMFN	RAM FIF		T/PROJECT COST BREAKDOWN (R-3)	OST BI	SEAKDOV	VN (R-3)		DATE	Eobriion, 2000	5
BUD	BUDGET ACTIVITY				PE NUMBI	PE NUMBER AND TITLE				iol dai y 20	PROJECT
6	07 - Operational System Development	Developme	 ±		0101122F		Air Launched Cruise Missile	uise Miss	e	9	674797
(3)	Performing Organizations Continued:	Continued:									
	Contractor or		•								
	Government	잂	Award or	Pertorming	Project		,	,	,	,	,
	Performing Activity	or Funding Vehicle	Obligation Date	Activity FAC	Office FAC	Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
	Product Development Organizations	zations									
	Development:										
	Boeing - CATIK	Eng Asgn	Mar 00	5,329	5,329	0	0	3,172	1,857	Continuing	TBD
	Boeing - INE	SS/CPIF	Jun 00	14,816	14,816	0	0	2,109	4,600	Continuing	TBD
	Support and Management Organizations	ganizations									
	Test and Evaluation Organizations	tions									
	Utah Test Range	MIPR	May 02	N/A	N/A	0	0	0	0	3,000	3,000
	49th Test Wing	MIPR	May 02	N/A	N/A	0	0	0	0	200	200
9	Government Furnished Property:	perty:									
		Contract Method/Tyme	Award or								
	Item	or Funding	Obligation	Delivery		Total Prior	Budget	Budget	Budget	Budget to	Total
	Description	Vehicle	Date	Date		to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
	Product Development Property	ξţ									
	N/A										
	N/A										
	Support and Management Property	perty									
	N/A										
	N/A										
	Test and Evaluation Property										
	None										
ц,	Project 674797			Pag	Page 6 of 7 Pages	čes			Exhibi	Exhibit R-3 (PE 0101122F)	01122F)

RDT&E PROGRAM ELEMENT/PROJECT	T/PROJECT COST BREAKDOWN (R-3)	VN (R-3)		DATE Fe	February 2000	e e
BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0101122F Air Launched Cruise Missile	nched Cr	uise Miss	ile	9	PROJECT 674797
Subtotals	Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	<u>Total</u> Program
Subtotal Product Development	0	0	5,281	6,457	TBD	TBD
Subtotal Support and Management Subtotal Test and Evaluation	0	0	0	0	3,500	3,500
Total Project	0	0	5,281	6,457	TBD	TBD
Project 674797	Page 7 of 7 Pages			Exhibi	Exhibit R-3 (PE 0101122F))1122F)

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	RDT&	RDT&E BUDGET ITEM JI	JSTIFIC	ATION	JSTIFICATION SHEET (R-2 Exhibit)	(R-2 E)	chibit)		DATE	Februa	February 2000
8UD(07 -	вирсет астіліту 07 - Operational Sys	BUDGET ACTIVITY O7 - Operational System Development			PE NUMBER AI 0102325F		ютпте Joint Surveillance System	ince Syst	tem		РВОЈЕСТ 672996
	COST (\$ in	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
672996	36 FAA/AF Radar Replacement (FARR)	acement (FARR)	1,582	0	0	0	0	0	0	0	22,845
	Quantity of RDT&E Articles	Articles	0	0	0	0	0	0	0	0	0
Note:	: Reprogramming reque	Reprogramming request in process for \$300K for FY	700 to compl	ete turnover	00 to complete turnover of final radar site.	ar site.					
<u>(i)</u>	A. Mission Description The Joint Surveillance System (JSS) prov Defense) Atmospheric Tactical Warning a (FARR) program replaces 39 existing JSS mission performance and reduce operation targets within a 200+ nautical mile radius.	A. Mission Description The Joint Surveillance System (JSS) provides command, control and communications (C3) capability in support of CINC NORAD's (North American Aerospace Defense) Atmospheric Tactical Warning and Attack Assessment (ATW/AA) air sovereignty, and air defense requirements. The FAA/Air Force Radar Replacement (FARR) program replaces 39 existing JSS radars and 1 log set radar with solid-state, three-dimensional Air Route Surveillance Radar (ARSR)-4 radars to improve mission performance and reduce operation and maintenance costs. The ARSR-4 radars provide three-dimensional (range, azimuth, and height) digital data on aircraft targets within a 200+ nautical mile radius.	and, control : Assessment (1 log set rac enance costs	and commun (ATW/AA) lar with soli.	and, control and communications (C3) capability in support of CINC NORAD's (North American Aerospace Assessment (ATW/AA) air sovereignty, and air defense requirements. The FAA/Air Force Radar Replacemen 1 log set radar with solid-state, three-dimensional Air Route Surveillance Radar (ARSR)-4 radars to improve enance costs. The ARSR-4 radars provide three-dimensional (range, azimuth, and height) digital data on aircr) capability nty, and air c -dimension: covide three-	in support o defense requ al Air Route -dimensional	of CINC NC irements. The Surveillance I (range, azin)RAD's (Nor ne FAA/Air I e Radar (AR muth, and he	th Americar Force Radar SR)-4 radars sight) digital	1 Aerospace Replacement s to improve data on aircraft
99999	EY 1999 (\$ in Thousands) \$439 Pro \$600 Cor \$543 Cor \$1,582 Total	nds) Provided program office support Continued test and system checkout Continued interoperability evaluations and commissioning support Total	ort ckout luations and	commissior	ning support						
999	FY 2000 (\$ in Thousands) \$0 No \$0 Tot	<u>nds)</u> No further funding in this project Total	ect								
999	FY 2001 (\$ in Thousands) \$0 No \$0 Tot	<u>nds)</u> No further funding in this project Total	ect								
<u> </u>	B. Budget Activity Justification This program is in budget activity	 Budget Activity Justification This program is in budget activity 7 - Operational System Development because it provides funding for the modernization of a currently existing and operating system. 	stem Develo	pment beca	use it provid	es funding f	or the moder	nization of	a currently ex	xisting and c	operating system.
۵.	Project <u>6</u> 72996	·		Page	Page 1 of 5 Pages	zn.			Ш	:xhibit R-2	Exhibit R-2 (PE 0102325F)

17 - Operational System Development	RDT&E BUDGET ITEM JUSTIFICA	STIFICATION SHEET (R-2 Exhibit)	(R-2 Exhi	bit)	DATE	E February 2000	2000
		PE NUMBE 010232	PE NUMBER AND TITLE 0102325F Joint Surveillance System	rveillance	System		PROJECT 672996
• • • • • • • • • • • • • • • • • • • •	in Thousands)		EV 1000	000C 250	D EV 2001	100	F (7)
• • • • • • • • • • • • • • • • • • • •	00 PBR)		2,099 2,175	7.1 400			22,854
• • • • • • • • • • • • • • • • • • • •) IS Irch		-76 -57				
• • • • • • • • • • • • • • • • • • • •	old Reprogram		-451 -9				
• • • • • • • • • • • • • • • • • • • •	: FY 2000 PBR 3R		1,582				-9 22,845
• • • • • • • • • • • • • • • • • • • •							
• • • • • • • • • • • • • • • • • • • •		Extimate Estimate	EY 2003 Estimate	EY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
• • • • • • • • • • • • • • • • • • • •	192	-	0	0	0		1,021
	ι (FAA) is the lead acquisition ag ndment 1, dated 1 September 19ε Vashington, DC for this procurem	acquisition agency for the FAA/AF Radar Replacement Program in accordance with a 19 November 1984 September 1988) to FAA/AF National Agreement (NAT) 711. The FAA and the Air Force have established this procurement. Northrup Grumman Corporation, Linthicum, MD is the prime contractor for the FARR.	F Radar Replace onal Agreement (unan Corporation	ement Program (NAT) 711. Tl n, Linthicum, l	in accordance he FAA and the MD is the prime	with a 19 Novembe Air Force have est: contractor for the I	er 1984 ablished a FARR
		FY 1999	6	FY 2000	000	FY 2001	100
Project 672996		Page 2 of 5 Pages	SS			Exhibit R-2 (PE 0102325F)	0102325F)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	HEET (R-2 Exhibit)	те February 2000
BUDGET ACTIVITY 07 - Operational System Development 00 - Operational System Development	PE NUMBER AND TITLE 0102325F Joint Surveillance System	PROJECT 672996
(U) E. Schedule Profile Continued	EY 1999 EY 2000 A	EY 2001
 (U) FARR last operational readiness date (U) FARR follow-on support including baselining/commissioning before FAA final Note: * denotes completed event, X denotes planned event. 		n
Project 672996	Page 3 of 5 Pages	Exhibit R-2 (PE 0102325F)

	RDT&E PROGRAM ELEMENT	SRAM ELE		I/PROJECT CC	ST BF	COST BREAKDOWN (R-3)	WN (R-3)		DATE Fe	February 2000	o e
8UD 07.	вирсет астииту 07 - Operational System Development	Developme	nt T		PE NUMB 01023 2	PE NUMBER AND TITLE 0102325F Joint Surveillance System	urveillanc	e System		a. 9	РРОЈЕСТ 672996
9	A. Project Cost Breakdown (\$ in Thousands)	ı (\$ in Thousan	(<u>sp</u>				1000	000	006 /81		1000
99999	Systems engineering Contractor engineering support Installation/Test/Checkouts Program Office support Total	ort						600 115 428 439 1,582		30000	0
9	B. Budget Acquisition History and Planning Information (\$ in Thousands)	ory and Plannin	g Informatio	in (\$ in Thousands	a						
9		Contract Method/Type or Funding Vehicle izations	Award or Obligation Date	Performing <u>Activity</u> <u>EAC</u>	Project Office EAC	Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	<u>Total</u> Program
	None Support and Management Organizations MITRE Various TEMS Various Martin Marietta Various Program Office Support Various Test and Evaluation Organizations Various	ganizations Various Various Various Various ations		X	N/A N/A N/A	5,099 1,669 6,339 1,849 6,307	600 115 0 439 428	00 0 0		0000 0	5,699 1,784 6,339 2,288 6,735
9	Government Furnished Property: Continuous Meth Item Or Fu Description Vehic Product Development Property none	perty: Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date		Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
ū	Project 672996			Page	Page 4 of 5 Pages	jes			Exhibit	Exhibit R-3 (PE 0102325F))2325F)

RDT&E PROGRAM ELEMENT/PR	I/PROJECT COST BREAKDOWN (R-3)	DATE February 2000	2000
вирсет аститу 07 - Operational System Development	PE NUMBER AND TITLE 0102325F Joint Surveillance System		PROJECT 672996
(U) Government Furnished Property Continued: Support and Management Property none Test and Evaluation Property none Subtotals	Total Prior Budget Budget to FY 1999 FY 2000	Budget Budget to FY 2001 Complete	to Total
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	14,956 1,154 0 6,307 428 0 21,263 1,582 0		0 16,110 0 6,735 0 22,845
Project 672996	Page 5 of 5 Pages	Exhibit R-3 (PE 0102325F)	E 0102325F)

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	JSTIFIC	ATION	SHEET	(R-2 Ex	(hibit)		DATE	February 2000	y 2000
97 07	BUDGET ACTIVITY 07 - Operational System Development			PE NUMBER AN 0102326F		n/ Secto	r Operat	ions Con	ю тите Region/ Sector Operations Control Center	PROJECT 9 r 674592
	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate		FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	-
674592	92 Region/Sector Operations Modernization Center (R/SAOC)	25,587	13,129	892	5,769	5,815	5,938	6,062	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0
(£)	A. Mission Description NOTE: Region/Sector Air Operations Center (R/SAOC) - USAF notified congress of the termination of contractor, Litton Data Systems, Agoura, CA. Contractor terminated 1 Oct 1999 because of excessive cost growth, schedule slips, and an improved understanding of requirements by both users and industry. Program being re-structured and Congress will be notified with more detailed cost and schedule information when Bi-National Steering Committee approves re-structured R/SAOC program with the FY02 budget submission.	OC) - USAF wth, schedule	notified cone slips, and s	ngress of the an improved ule informat	termination understandi ion when Bi	of contractc ng of require National St	r, Litton De ements by b eering Com	uta Systems, oth users and mittee appro	Agoura, CA. d industry.]	OC) - USAF notified congress of the termination of contractor, Litton Data Systems, Agoura, CA. Contractor 4th, schedule slips, and an improved understanding of requirements by both users and industry. Program being detailed cost and schedule information when Bi-National Steering Committee approves re-structured R/SAOC
	The Region and Sector Air Operations Center (R/SAOC) Modernization Program will provide a modernized Command, Control, Communication, Computer and Intelligence (C4I) system with enhanced capability to integrate data from existing and future civil and military defense surveillance system into a comprehensive recognized air picture to enhance CINC NORAD's (North American Aerospace Defense Command) capability to conduct a peacetime air sovereignty, transition and conventional warfare in the event of aggression toward the North American Continent. The current system has reached saturation in its capability to receive, process, display, exchange, and employ air surveillance data from current sensor systems. In some cases, it has exceeded processing and displaying capacity, thus contributing to delayed C4I decisions. The outdated technology has become increasingly difficult and costly to maintain.	OC) Modern integrate da North Americ rd the North rom current become incr	uization Prog uta from exis can Aerospa American C sensor syste easingly dif	tram will prosting and futtoce Defense (Sontinent. Toms. In some ficult and co	wide a mode ure civil and Command) c he current sy cases, it ha	mized Com military det apability to stem has re: s exceeded I;	mand, Cont ense surveil conduct a p uched satura rrocessing a	rol, Commu llance systen eacetime air tion in its ca nd displayin	nication, Con n into a comp sovereignty, tpability to re g capacity, th	nputer and rehensive transition and ceive, process, us contributing to
99	EY 1999 (\$ in Thousands) \$20,500 Continuation of Software Development/Modification for Core Operating Capability (COC) and Prepare for Install of New Equipment at First	elopment/Mo	odification f	or Core Ope	rating Capal	oility (COC)	and Prepar	e for Install	of New Equip	ment at First
<u> </u>	\$1,600 Systems Engineering Support \$2,566 Program Management and Technical Support \$921 Program Office Support \$25,587 Total	chnical Supp	ort							
(ı	,				•	:	
	Project 6/4592		Page	Page 1 of 5 Pages	S				-Xnibit K-2 (Exnibit K-2 (PE 0102326F)

	RDT&E BUDGET ITEM JUSTIFICATION	STIFICATION SHEET (R-2 Exhibit)	it)	DATE Februa	February 2000
BUD(07 -	BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0102326F Region/ Si	ector Operati	и πт.∈ Region/ Sector Operations Control Center	PROJECT (er 674592
3	A. Mission Description Continued				
99999	FY 2000 (\$\\$\\$\\$\\$\\$\\$\\$\ \ \ \ \ \ \ \ \ \ \ \	Systems			
3333	FY 2001 (\$\secondarrow{\seconda				
9	B. Budget Activity Justification This program is a budget activity 7 - Operational System Development because it provides funding for the modernization of a currently existing and operating system.	occause it provides funding for the n	nodernization of a	currently existing and o	perating system.
9	C. Program Change Summary (\$ in Thousands)				
569	Previous President's Budget (FY 2000 PBR) Appropriated Value	EY 1999 21,428 21,792	EY 2000 13,239 13,239	FY 2001 992	Total Cost
9	Adjustments to Appropriated Value a. Congressional/General Reductions b. Small Business Innovative Research c. Omnibus or Other Above Threshold Reprogram d. Below Threshold Reprogram e. Rescissions	-302 -688 -143 4,990 -62	-110		
99_	f. Other Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR	25,587	13,129	992	TBD
<u>а</u> .	Project 674592	Page 2 of 5 Pages		Exhibit R-2	Exhibit R-2 (PE 0102326F)

	RDT&E BUDGET ITEM JUSTIFICA	STIFICATION SHEET (R-2 Exhibit)	(R-2 Exhil	bit)	7Q	DATE February 2000	ry 2000
8UD 07	вироет астіvіту 07 - Operational System Development	PE NUMBER AND TITLE 0102326F Region	RAND TITLE FRegion/	Sector Ope	rations C	⊌⊽ ਸਾ⊓∈ Region/ Sector Operations Control Center	PROJECT er 674592
3	C. Program Change Summary (\$ in Thousands) Continued						
<u>(</u>	Significant Program Changes: NOTE: USAF notified congress of termination of contractor, Litton Data Systems, Agoura, CA - terminated 1 Oct 1999 for excessive cost growth, schedule slips and improved understanding of requirements by both users and industry. Program being re-structured and Congress will be notified with detailed cost and schedule information when Bi-National Steering Committee approves re-structured R/SAOC program with the FY02 budget submission.	n Data Systems, Agour Program being re-st	ra, CA - termin tructured and Co am with the FY	ated 1 Oct 199 ongress will be 02 budget subr	9 for excessiv notified with nission.	e cost growth, sc detailed cost anc	chedule slips and 1 schedule
9	D. Other Program Funding Summary (\$ in Thousands) FY 1999 FY 2000 FY 3	EX 2001 FX 2002 Estimate Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to	Total Cost
566	2,871 0		0 4,955 0	0 5,060 0	0 5,174 0	Continuing	TBD
,	NOTE 1: Both Appropriations Committees zeroed out the FY99 procurement budget at the request of the AF. Due to program restructure in FY98, the procurement requirements were deferred from FY 1999 to FY 2000 and FY 2000 and FY 2001 to FY 2002 and FY 2003.	curement budget at the Program has again un	e request of the dergone a restru	AF. Due to practuring in FY	ogram restruc 1999. Procur	ture in FY98, the ement has been d	procurement deferred from FY
9	E. Acquisition Strategy Management for the R/SAOC Modernization is by ESC, AFMC, Hanscom AFB MA. The R/SAOC Modernization acquisition is being pursued through an evolutionary acquisition approach to develop a modular, open system architecture, Defense Information Infrastructure (DII) Command Operating Environment (COE) compliant system through incremental software release and periodic hardware and commercial software refresh. Initial development focuses on system to provide an initial capability designated as the Core Operating Capability (COC). Prime Contract was awarded in March 1997 to Litton Data Systems Division, Agoura Hills, CA.	, AFMC, Hanscom AFB MA. The R/SAOC Modernization acquisition is being pursued through an evol architecture, Defense Information Infrastructure (DII) Command Operating Environment (COE) complic hardware and commercial software refresh. Initial development focuses on system to provide an initial (COC). Prime Contract was awarded in March 1997 to Litton Data Systems Division, Agoura Hills, CA.	R/SAOC Mode Infrastructure (I rre refresh. Initi	rnization acqui DII) Command al developmen 7 to Litton Dat	isition is being Operating Er t focuses on s a Systems Div	g pursued throug) rvironment (COE ystem to provide vision, Agoura H	h an evolutionary 3) compliant 3 an initial iills, CA.
	Contractor terminated 1 Oct 1999. USAF notified congress of termination of contractor, Litton Data Systems, Agoura, CA - terminated 1 Oct 1999 for excessive cost growth, schedule slips and improved understanding of requirements by users and industry. Program being re-structured and Congress will be notified with detailed cost and schedule information when Bi-National Steering Committee approves re-structured R/SAOC program with the FY02 budget submission.	nation of contractor, L by users and industry. roves re-structured R/S	Litton Data Syste Program being SAOC program	ems, Agoura, C re-structured a with the FY02	A - terminat nd Congress v budget submi	ed 1 Oct 1999 fo. will be notified w ission.	r excessive cost vith detailed cost
9	F. Schedule Profile	FY 1999 1 2 3	4	$\frac{\text{FY } 2000}{1}$	3 3	1	FY 2001 2 3 4
33	Software Version 2.0b Complete Contractor Terminated/Congress notified *Denotes completed event	*	*				
Ω.	Project 674592	Page 3 of 5 Pages				Exhibit R-2 (Exhibit R-2 (PE 0102326F)

	RDT&E PROGRAM ELEMENT	RAM ELE		I/PROJECT COST BREAKDOWN (R-3)	COST BI	REAKDOV	WN (R-3)		DATE Fe	February 2000	8
BUD(07 -	вирдет астіvіту 07 - Operational System Development	Developme	ıt		PE NUMBER AN 0102326F		ı/ Sector (וס דודוב Region/ Sector Operations Control Center	s Control		РRОЈЕСТ 674592
9	A. Project Cost Breakdown (\$ in Thousands)	(\$ in Thousan	ds)				FV 1000	000	EV 2000	0	FV 2001
5	System Engineering Support] -	1,600	359	a v	307
999	Program Management and Technical Support	schnical Suppor	(ب				2,5	2,566	3,276	n 9	009
333	Development/Modification of Software for COC Contract Close due to termination of Litton Data Systems Total	f Software for C ation of Litton I	OC Oata Systems				20,	20,500 25,587	9,198 13,129	8 6	992
3	B. Budget Acquisition History and Planning Information (\$ in Thousands)	ry and Plannir	ig Informatic	ın (\$ in Thousa	(spu						
9	Performing Organizations:	400									
	Contractor of Government Performing	Method/Type or Funding	Award or Obligation	Performing Activity	<u>Project</u> <u>Office</u>		Budget	Budget	Budget	Budget to	Total
	Activity Vehic Product Development Organizations	Vehicle zations	Date	EAC	EAC	to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
	LITTON*	CPAF	14 Mar 97	Continuing	Continuing	21,242	20,500	9,198	0	Continuing	TBD
	Support and Management Organizations MITRE Various	ganizations Various	A/N	N/A	N/N	2.773	1.500	1.732	400	Continuing	TBD
	TEMS	Various	N/A	N/A	N/A	2,664	1,397	1,333	200	Continuing	TBD
	Program Office Support	Various	N/A	N/A	N/A	778	2,025	929	392	Continuing	TBD
	Test and Evaluation Organizations 46th Test Wing/Other Test Act	tions				215	165	211	0	Continuing	TBD
9	Government Furnished Property:	perty: Contract									
	Item Description	Method/Type or Funding Vehicle	Award or Obligation Date	<u>Delivery</u> <u>Date</u>		Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	<u>Total</u> Program
ட	Project 674592			дı	Page 4 of 5 Pages	ges			Exhibi	Exhibit R-3 (PE 0102326F)	02326F)

RDT&E PROGRAM ELEMENT	LEMENT/PF	ROJECT (I/PROJECT COST BREAKDOWN (R-3)	OWN (R-3		DATE Fe	February 2000	8
BUDGET ACTIVITY 07 - Operational System Development	nent		PE NUMBER AND TITLE 0102326F Region/ Sector Operations Control Center	LE ion/ Sector	Operations	s Control	1 1	PROJECT 674592
(U) Government Furnished Property Continued: Contract Method/Type A Item or Funding O Description Vehicle D Product Development Property None Support and Management Property None	ward or bligation ate	<u>Delivery</u> Date	Total Prior to FY 1999	u <u>Budget</u> 19 FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	<u>Total</u> Program
Test and Evaluation Property None Subtotals Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project			Total Prior to FY 1999 21,242 6,215 215 27,672	Budget EY 1999 2 20,500 4,922 5 165 2 25,587	Budget EY 2000 9,198 3,720 211 13,129	Budget FY 2001 0 992 0 992	Budget to Complete TBD TBD TBD TBD	Total Program TBD TBD TBD TBD
Project 674592		Pa	Page 5 of 5 Pages			Exhibi	Exhibit R-3 (PE 0102326F))2326F)

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	RDT&E BUDGET ITEM JU		ATION	STIFICATION SHEET (R-2 Exhibit)	(R-2 Ex	thibit)		DATE		February 2000
8UDG 07 -	BUDGET ACTIVITY 07 - Operational System Development			PE NUMBER 0102411	PE NUMBER AND TITLE 0102411F North	PE NUMBER AND TITLE 0102411F North Atlantic Defense System	Defense	System		РРОЈЕСТ 672980
	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
672980	0 North Atlantic Defense System (NADS)	537	0	0	0	0	0	0	0	61,699
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0
(D)	A. Mission Description This program provides improvements to command, control, and communications (C3) and air surveillance capabilities in Iceland. The Control Reporting Center (CRC) and air surveillance radars support air defense requirements in the strategically important Greenland-Iceland-Norwegian gap. The program is a joint program with NATO funding infrastructure while the US funds cryptographic capabilities, system engineering and integration activities. The Joint Formal Acceptance Inspection (JFAI), a NATO required technical inspection of the entire system, is complete. Both the JFAI and a NATO required financial audit are completed and the system has been turned over to NATO/Iceland.	control, and c ements in the ptographic c entire systen	ommunicat strategicall apabilities, a, is comple	ions (C3) and y important system engir te. Both the	d air surveill Greenland-I leering and i IFAI and a l	ance capabil celand-Norw integration a	lities in Icele vegian gap. ctivities. The	and. The Cc The prograr he Joint Forn I audit are cc	nntrol Reporti n is a joint pi nal Acceptan ompleted and	ing Center (CRC) rogram with ce Inspection the system has
	In Jul 99 NATO approved full program funding for implementation of a Link 16 capability for NADS in Iceland (approx \$28M). As the host nation in Iceland, the US will be responsible for funding the system engineering and intergration activities (approx \$11M over the FYDP).	mplementati ng and interg	on of a Link ration activi	plementation of a Link 16 capability for NADS in Iceland and intergration activities (approx \$11M over the FYDP)	y for NADS \$11M over t	in Iceland (he FYDP).	approx \$28]	M). As the l	host nation in	Iceland, the US
99999	\$256 Provided program office support \$250 Provided systems engineering support for NADS \$80 Provided systems integration activities for NADS \$537 Total	ort support for] activities for	NADS NADS							
999	FY 2000 (\$\\$\) in Thousands) \$0 No further funding in this project \$0 Total	ject								
555	FY 2001 (\$ in Thousands) \$0 No further funding in this project \$0 Total	ject								
9	B. Budget Activity Justification The program is in Budget Activity 7 since it supports improvements to currently operational systems.	s improveme	nts to currer	ıtly operatioı	ıal systems.					
P	Project 672980	:	Page	Page 1 of 5 Pages	2				Exhibit R-2 (Exhibit R-2 (PE 0102411F)

C. Program Change Summary (S in Thousands) Pervious President's Budget (FY 2000 PBR) Appropriated Value a. Congressional/General Reductions b. Small Business Innovative Research c. Omnibus or Other Above Threshold Reprogram d. Below Threshold Reprogram f. Other Adjustments to Budget Years Since FY 2000 PBR Activation of Program Changes: D. Other Program Changes: D. Other Program Changes: Activated Acceptance Inspection). The JFA is a NATO technical and financial and it. Any discrepancies must be 1. The anticipated three year contract will be funded under the NATO Infrastructure Program and will be conducted. Infrastructure The NATO Security Investment Program and will be conducted under the NATO Security Investment Program and will be conducted on the Program and will be conducted under the NATO Security Investment Program and will be conducted integrated Systems Division, the OEM and owner of the software data rights. E. Schedule Profile E. Schedule Profile		RDT&E BUDGET ITEM JUSTIFIC,	ATION S	SHEET (STIFICATION SHEET (R-2 Exhibit)	bit)		DATE February 2000	y 2000
	97 04	_{GET АСТIVITY} - Operational System Development		PE NUMBER / 0102411F	AND TITLE North At	lantic Def	ense Sys		PROJECT 672980
	Ð				FV 1000	EV 2000		EV 2001	Total Cont
	9	Previous President's Budget (FY 2000 PBR)			569	777		0	61,702
	3	Appropriated Value			615				
	9	Adjustments to Appropriated Value							
		a. Congressional/General Reductions			46				
		b. Small Business Innovative Research			-17				
		c. Omnibus or Other Above Threshold Reprogram			9				
		d. Below i hreshold Keprogram			-12	·			•
		e. Kescissions f Other			ů		-		0
	Œ	I. Outer Adjustments to Budget Years Since FV 2000 PBR					-		
	3	Current Budget Submit/FY 2001 PBR			537		0	0	61,702
	3	Significant Program Changes:							
	9	D. Other Program Funding Summary (\$ in Thousands)							
		EY 2000 Fetimate		FY 2002 Ferimate	FY 2003 Fertimate	FY 2004 Fertimate	FY 2005 Ferimate	Cost to	Total Cost
	9	Amiliary	Augrina	Amminer	Appropried	<u>राष्ट्रामानस्य</u>	Amman	ANAIdimax	
	9	Other APPN							
	9	E. Acquisition Strategy							
		The acquisition of hardware has been completed. Prior year funding	g provided er	ngineering su	ipport during t	the NATO Op	erational Rev	iew known as the JI	FAI (Joint
		Formal Acceptance Inspection). The JFAI is a NATO technical an	d financial at	udit. Any di	screpancies m	ust be correcte	ed to satisfy N	IATO.	
		The anticipated three year contract will be funded under the NATO	Infrastructu	re Program a	nd will be con	ducted in acc	ordance with	NATO's document.	AC/4-D/2261,
		'Infrastructure Committee The NATO Security Investment Program be Firm Fixed Price (FFP). Additionally, the contract will direct the	une Procedu at required c	res for Interribanges to the	ational Comp	etitive Bidding software be a	g (1996 Editi ccomplished	on)'. As such, the co	ontract type will to Raytheon
			ata rights.						
	<u> </u>	F. Schedule Profile		FY 1999		EY.2	FY 2000	FY	FY 2001
Project 672980		roject 672980	Page 2	of 5 Pages				Exhibit R-2 (PE 0102411F)	E 0102411F)

RDT&E BUDGET ITEM JUSTIFICATION	STIFICATION SHEET (R-2 Exhibit)	February 2000
вирсет астіvіту 07 - Operational System Development	PE NUMBER AND TITLE 0102411F North Atlantic Defense System	
(U) E. Schedule Profile Continued	FY 1999 FY 2000	FY 2001
 (U) JFAI (U) NATO Financial Audit (U) Program residuals (U) Note: * denotes completed event, X denotes planned event. 		n
Project 672980	Page 3 of 5 Pages	Exhibit R-2 (PE 0102411F)

	RDT&E PROGRAM ELEMENT	M ELEME	NT/PF	I/PROJECT COST BREAKDOWN (R-3)	ST BF	EAKDOV	VN (R-3)		DATE Fe	February 2000	00
BUE 07	вирсет астилту 07 - Operational System Development	lopment			PE NUMBE 010241	PE NUMBER AND TITLE 0102411F North Atlantic Defense System	\tlantic De	efense Sy	stem	9	PROJECT 672980
(£)	A. Project Cost Breakdown (\$ in Thousands)	Thousands)									
9	Engineering Support						FY 1999 201	1999 201	FY 2000 0	3 0	FY 2001 0
999	Intergation Activiy Support Program Support Total						(4 4)	80 256 537	J	0	0
9	B. Budget Acquisition History and Planning Information (\$ in Thousands)	d Planning Inf	<u>ormation</u>	(\$ in Thousands)	-						
<u> </u>	Performing Organizations; Contractor or Government	Lype	Award or	Performing	Project						
	Performing or Fundi Activity Vehicle	ading le	Obligation Date	Activity EAC	Office EAC	Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	<u>Total</u> Program
	and Management Orga		č			t c	Č	¢	ć	C	
	TEMS Various	ous Oct 94	‡	N/A	K K N/N	37,617 16,583	281 178	0	0	0	38,098 16,761
	Program Office Support Various	sn.		N/A	N/A	3,384	78	0	0	0	3,462
	Lest and Evaluation Organizations Various					3,378	0	0	0	0	3.378
	GFP/GFE None					•	0	0	0	0	0
<u> </u>	Government Furnished Prop Item Description Product Development Property Support and Management Prop	act od/Type od/Type	dor	<u>Delivery</u> <u>Date</u>		Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	<u>Total</u> Program
-	Project 672980			Page 4	Page 4 of 5 Pages	es			Exhibi	Exhibit R-3 (PE 0102411F)	02411F)

RDT&E PROGRAM ELEMENT/PRO	T/PROJECT COST BREAKDOWN (R-3)	VN (R-3)		DATE Fe	February 2000	e
вирсет аститу 07 - Operational System Development	PE NUMBER AND TITLE 0102411F North Atlantic Defense System	Atlantic Do	efense Sy		9	PROJECT 672980
Subtotals	Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
Subtotal Product Development						
Subtotal Support and Management	57,784	537	0	0	0	58,321
Subtotal Test and Evaluation	3,378	0	0	0	0	3,378
Total Project	61,162	537	0	0	0	61,699
Project 672980	Page 5 of 5 Pages			Exhibi	Exhibit R-3 (PE 0102411F))2411F)

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RDT&E BUDGET ITEM JU	JUSTIFIC	ATION	ISTIFICATION SHEET (R-2 Exhibit)	(R-2 Ex	thibit)		DATE	February 2000	y 2000
BUDGET ACTIVITY			PE NUMBER	PE NUMBER AND TITLE					PROJECT
07 - Operational System Development			0207027	F Air Sr	0207027F Air Space Command & Control Agency	nmand &	Control	Agency	674814
COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
674814 Expenditionary Force Experiment (EFX)	0	0	24,769	88,053	25,375	65,168	25,922	25,922 Continuing	ТВО
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0
		,	,						

Note: JEFX 98, 99,00 have been planned and executed within existing command and control space programs.

9

forces and simulations into an operationally representative warfighter environment. These experiments provide a vehicle for experimentation with operational concepts global mobility; and dynamic battle control. JEFX 2000 is planned and will be executed with reprogrammed funds and other Air Force funding from existing command The Joint Expeditionary Force Experiments (JEFX) are large-scale warfighter experiments and are part of the total AF experimentation effort. They combine live-fly and attendant new technologies for enhancing capabilities of the 21st century aerospace force. They are part of a broader effort to implement the Joint Vision 2010, Commander. JEFX 2000 will emphasize Agile Combat Support, but exploration will also occur in managing intelligence, surveillance, and reconnaissance assets; exploit the Revolution in Military Affairs, and demonstrate emerging Air Force capabilities to deploy and employ decisive aerospace power for the Joint Force and control, global power, global reach, and space Program Elements.

In FY01, the Air Force moves to a biennual schedule for JEFX conducted in the even years. In addition, the Air Force begins the integration of proven initiatives into Specific weapon system development and procurement activities are funded in their own budget lines as applicable. A full-scale experiment as performed in FY99 and technologies to the warfighter will be based on a rigorous, defined process which ensures interoperability with fielded programs and maximum return on investment. FY00 will be conducted in FY02. Integrated Air Force/Joint/Coalition Command and Control integration of new initiatives and legacy systems into an integrated integrated Air Force/Joint/Coalition Command and Control providing integrated/interoperable fielded capabilities for warfighter use. Transition of selected Command and Control, Intelligence, Surveillance, and Reconnaissance (C2ISR) baseline will be an ongoing activity.

FY 1999 (\$ in Thousands)

No Activity 999

Total

No Activity FY 2000 (\$ in Thousands)

Project 674814

UNCLASSIFIED

Page 1 of 5 Pages

Exhibit R-2 (PE 0207027F)

	RDT&	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhibit	(DATE February 2000	, 2000
8UD<	вирбет астіліту 07 - Operational Sys i	вирсет аститу 07 - Operational System Development	PENUMBER AND TITLE 0207027F Air Space Command & Control Agency	command &	Control Agency	PROJECT 674814
<u>(c)</u>	A. Mission Description Continued	n Continued				
99	FY 2001 (\$ in Thousands) \$2,559 Init	iatives from government and	industry, selection and prioritization of new and previously considered initiatives, C2 Center Communications	ously considered i	nitiatives, C2 Center Con	nmunications
9	\$2,360		n, including engineering, for the exp	periment		
99	\$1,850 \$8,000	Planning and coordination for the experiment Implement JEFX 2000 architectural configuration, conduct M&S, install infrastructure, install and test LAN configurations and communications,	onduct M&S, install infrastructure,	install and test L	AN configurations and cc	mmunications,
99	\$10,000 \$24,769	and test operational software Integration of new initiatives and legacy systems into an integrated C2ISR baseline Total	o an integrated C2ISR baseline			
<u>3</u>	B. Budget Activity Justification This effort is Budget Activity 7, C	B. Budget Activity Justification This effort is Budget Activity 7, Operational System Development, because the program will develop and implement software for operational computer applications.	e the program will develop and imp	element software f	for operational computer a	applications.
<u>E</u>	C. Program Change	C. Program Change Summary (\$ in Thousands)	0001 VII	DV 2000	100C A3	C Total
999	Previous President's Budget (FY 2000 PBR) Appropriated Value Adjustments to Appropriated Value a. Congressional/General Reductions b. Small Business Innovative Research c. Omnibus or Other Above Threshold Repr	Previous President's Budget (FY 2000 PBR) Appropriated Value Adjustments to Appropriated Value a. Congressional/General Reductions b. Small Business Innovative Research c. Omnibus or Other Above Threshold Reprogram		2,946	20,000	TBD
	d. Below Threshold Reprograme. Rescissionsf. Other	program		-2,946		TBD
99	Adjustments to Budget Years Since F Current Budget Submit/FY 2001 PBR	Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR		o 0	4,769 24,769	TBD
<u>e</u>	Significant Program Changes	hanges:				
Δ.	Project 674814	Pag	Page 2 of 5 Pages		Exhibit R-2 (PE 0207027F)	E 0207027F)
		-				

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TION SHEET	(R-2 Exh	ibit)		DATE February 2000	y 2000
07	вирсет астіvіту 07 - Operational System Development	PE NUMBER AN 020707F		ce Comma	nd & Con	ID TITLE Air Space Command & Control Agency	PROJECT 674814
6 6	D. Other Program Funding Summary (\$ in Thousa EY 1999 EY 2 Actual Esti AF RDT&E 6,000 2	EX 200	FY 2003 Estimate 0	FY 2004 Estimate	EX 2005 Estimate	Cost to Complete Continuing	Total Cost
9 8		0	0	0	0	Continuing	TBD
<u> </u>	E. Acquisition Strategy Electronic Systems Center (ESC), Hanscom AFB, MA will manage the acquisition and development process for the experimentation, integration, and fielding of selected technologies with legacy systems in an integrated C2ISR baseline. The spiral development system was created to field new and emerging technologies quickly. One of the tenents of the streamlined acquisition philosophy is to provide new capabilities through the integration of existing software components. JEFX periodically provides the opportunity to demonstrate new capabilities which provide decisive air and space power by identifying existing DII components and other software that can be integrated to further advance effectiveness. Research and development funding will be used to develop the integrating code for various systems ranging from communications, C2, computers, weapons, ISR and aerospace delivery vehicles. In addition, funds will be used to develop enhancements to existing capabilities necessary to demonstrate how emerging products can improve the warfighters' effectiveness. Spirals within the acquisition cycle allow deficiencies to be identified and considered for future spirals as well as the next experiment or applied to current capabilities. Selected technologies will be identified via a vigorous, defined process for integration with existing systems and transitioned to the field for warfighter use. Integration efforts will capitalize on the synergy between evolving technologies and on-going system program modifications to maximize the return on investment.	e acquisition and de e spiral developmen capabilities through e air and space powe it funding will be use y vehicles. In addition fighters' effectivene to current capabilitie estment.	velopment proc at system was ca the integration or by identifyin ed to develop it on, funds will b ss. Spirals with ss. Selected tec on efforts will c	cess for the expreated to field rate of existing so g existing DII (e integrating context) in the acquisit thrologies will exprease on the	erimentation, new and emer. ftware compo- components a ode for variou lop enhancem ion cycle allo be identified e synergy beth	integration, and figure technologies ments. JEFX periond other software is systems ranging ents to existing caw deficiencies to be via a vigorous, deveen evolving tecl	elding of selected quickly. One of odically provides that can be from pabilities be identified and fined process for mologies and
9	E. Schedule Profile	FY 1999	9 4	EY 2	FY 2000	- - -	FY 2001
999	Call for Initiatives, JEFX 2000 Initiative Selection, JEFX 2000 Conduct Spiral I			, ×			
93				1	××		
93					× > :		
33333					<	××	×
	Project 674814	Page 3 of 5 Pages	S			Exhibit R-2 (Exhibit R-2 (PE 0207027F)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2000
BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0207027F Air Space Command & Control Agency	PROJECT PROJECT FOI Agency 674814
(U) E. Schedule Profile Continued (U) Small scale experiment (4QFY01) (U) Conduct Spiral II (1QFY02) (U) Conduct Spiral III (2QFY02) (U) Conduct Spiral III (2QFY02) (U) Conduct JEFX 2002 Experiments (4QFY02) (U) Perform Assessment, JEFX 2002 Experiments (1QFY03) (U) Perform Assessment, JEFX 2004 (1QFY03) (U) Call for Initiatives, JEFX 2004 (1QFY03) (U) Call for Initiative Selection, JEFX 2004 (2QFY03) * Denotes completed event X Denotes planned event	EY 1999 EY 2000 The state of	X 700
Project 674814	Page 4 of 5 Pages	Exhibit R-2 (PE 0207027F)

	RDT&E PROGRAM ELEMENT	RAM ELE	MENT/PF	/PROJECT COST BREAKDOWN (R-3)	OST BF	REAKDON	VN (R-3)		DATE F 6	February 2000	000
- 20	вирвет астилту 07 - Operational System Development	Developme	int		PE NUMBER AN 0207027F	PE NUMBER AND TITLE 0207027F Air Spa	ice Comm	⊌D माम∟ Air Space Command & Control Agency	ntrol Age	ency	PROJECT 674814
<u>(</u>	A. Project Cost Breakdown (\$ in Thousands)	(\$ in Thousan	(Sp				FY 1999	666	FY 2000	8	FY 2001
9	Initiatives from government and industry, selection and considered initiatives. C2 Center Communications and	and industry, se	lection and prio	prioritization of new and previously Commiter develonment ingrades	and previou	ısly				Ī	2,559
£	Development of systems architecture and integration, including engineering, for the experiment Planning and coordination for the experiment	nitecture and int	egration, includ	ling engineering,	for the expe	riment					2,360
(3)	Implement JEFX 2000 architectural configuration, conduct M&S, install infrastructure, install and test LAN configurationsand communications, test operational software, conduct small -scale	ectural configui	ration, conduct	M&S, install infrall software, condu	astructure, i uct small -s	nstall and cale					8,000
99	experimentation, and evaluate experiment results Integration of new initiatives and legacy systems into an integrated C2ISR baseline Total	te experiment re and legacy syst	esults tems into an int	egrated C2ISR ba	ıseline						10,000 24,769
9	B. Budget Acquisition History and Planning Information (\$\subsection\$ in Thousands)	ry and Planni	ng Information	(S in Thousand	હ						
<u>e</u>	Performing Organizations: Contractor or	Contract	**************************************	Dogwein							
	Performing Activity	or Funding Vehicle	Obligation Date	Activity EAC	Office EAC	Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
	Product Development Organizations ESC variou	<u>zations</u> various	various	N/A	N/A				24,769	Continuing	TBD
	Support and Management Organizations Test and Evaluation Organizations None	ganizations <u>tions</u>									
	Subtotals					Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total
	Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation	nt ment							24,769	TBD	
	Total Project								24,769	TBD	TBD
<u>a</u>	Project 674814			Page	Page 5 of 5 Pages	es			Exhib	Exhibit R-3 (PE 0207027F)	3207027F)

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	RDT&E BUDGET ITEM JU		ATION	STIFICATION SHEET (R-2 Exhibit)	(R-2 E)	chibit)		DATE		February 2000
80DC 07	вирсет астилту 07 - Operational System Development			PE NUMBER AN 0207131F		D TITLE A-10 SQUADRONS	ONS			PROJECT 674809
	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
674809	09 A-10 Squadrons	2,170	8,013	8,615	8,933	10,189	44,416	9,172	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0
3	A. Mission Description The primary mission of the A/OA-10 is to provide close air support (CAS) for friendly land forces and to act as the forward air controller (FAC) to coordinate and direct friendly air forces in support of land forces. The A/OA-10 has a secondary mission of supporting search and rescue (SAR) and special forces operations. It also possesses a limited capability to perform certain types of interdiction. All of these missions may take place in a high- or low-threat environment. The A-10 System Program Office (SPO) is directed to upgrade and modernize the A/OA-10 aircraft to enhance its ability to support CAS and interdiction mission requirements. The Integrated Flight and Fire Control Computer (IFFCC), formerly known as the Low Altitude Safety and Targeting Enhancement (LASTE) computer upgrade, will enhance the computer memory, throughput, and system architecture to allow the aircraft to integrate advanced weapons and accommodate a situational awareness display, a data-link capability, an Electronic Warfare Management System, and the Digital Terrain System.	lose air suppo OA-10 has a a es of interdici odernize the A change of the A change of the A	ort (CAS) fo secondary in ion. All of V/OA-10 air nown as the ure to allow it System, ai	or friendly landission of supthese mission of craft to enhabit to enhabit the aircraft the discraft the discr	nd forces and poorting sear ns may take nce its abilitide Safety and o integrate and Terrain Sy	d to act as the rich and rescriplace in a high y to support d Targeting dvanced we stem.	e forward ai Le (SAR) an Ligh- or low-1 CAS and in Enhancemen apons and a	r controller d special for threat envirc terdiction m at (LASTE)	(FAC) to cocress operation mment. The anission requir computer up computer up e a situationa	rdinate and direct as. It also A-10 System ements. The grade, will I awareness
	RDT&E funds are executed in developing improved capability, maintenance, and safety modification development efforts. Without continuing avionics, airframe and weapon systems upgrades, the A/OA-10 will have difficulty adhering to the regional CINCs requirement for a Close Air Support platform.	capability, n ifficulty adhe	naintenance, ring to the r	and safety regional CIN	nodification Cs requirem	developmen ent for a Clo	it efforts. W	ithout contin	nuing avionic	s, airframe and
23333	FY 1999 (\$\\$\text{in Thousands}\) \$2,170 Development for Integrated Flight and Fire Control Computer (IFFCC) \$0 - Software creation and debugging \$0 - OFP updates to IFFCC software \$2,170 Total	light and Fire gging vare	: Control Cc	omputer (IFF	(22)					
23333	FY 2000 (\$\\$\sin Thousands) \$4,181 Continue software update/conversion and hardware development for (IFFCC) \$3,832 Initiate Common Data Link Solution \$0 - Software development and integration solutions \$8,013 Total	rversion and l olution ntegration so	nardware de lutions	velopment f	or (IFFCC)					
<u>a</u>	Project 674809		Page	Page 1 of 5 Pages	S			ш	Exhibit R-2 (Exhibit R-2 (PE 0207131F)

	RDT&E BUDGET ITEM JU	GET ITEI		ICATION	STIFICATION SHEET (R-2 Exhibit)	(R-2 Exhi	bit)		DATE February 2000	y 2000
- 20	вирсет астилту 07 - Operational System Development	relopment			PE NUMBER AND TITLE 0207131F A-10		ID TITLE A-10 SQUADRONS			PROJECT 674809
9	A. Mission Description Continued	led								
5555	FY 2001 (\$ in Thousands) \$4,411	hardware deve ware and hard	ids) Complete hardware development and modification of the Integrated Flight and F Begin software and hardware development for the Digital Terrain System (DTS) Total	nodification of nent for the Dig	the Integrated gital Terrain Sy	Flight and Fire /stem (DTS)	lds) Complete hardware development and modification of the Integrated Flight and Fire Control Computer (IFFCC) Begin software and hardware development for the Digital Terrain System (DTS) Total	puter (IFFCC	(
Ð	B. Budget Activity Justification The A/OA-10 RDT&E program is in budget activity	s in budget ac	7	ational System	ı Development	because it sup	- Operational System Development because it supports an operational system.	tional system		
9	C. Program Change Summary (\$ in Thousands)	(\$ in Thousa	(spi							
<u>(</u>	Previous President's Budget (FY 2000 PBR)	2000 PBR)				EY 1999 2,305	EY 2000 8,108	딦	FY 2001 9,085	<u>Total Cost</u> TBD
99	Appropriated Value	94				2,312	8,108	~		
9	a. Congressional/General Reductions	ions				1-				
	b. Small Business Innovative Research c. Omnibus or Other Above Threshold Reprogram	search shold Renrom	me.			96-	4			
	d. Below Threshold Reprogram					-27				
	e. Rescissions					-12	-51	_		TBD
55	Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR	ice FY 2000 P PBR	BR			2,170	8,013	~	-470 8,615	TBD
9	Significant Program Changes;									
9	D. Other Program Funding Summary (\$ in Thousar FY 1999 FY 2	nmary (\$ in T FY 1999	Thousands) EY 2000	FY 2001	FY 2002	EY 2003	FY 2004	FY 2005	Cost to	Total Cost
999	AF RDT&E Other APPN Aircraft Procurement, BP-11	Actual 28,344	27,133	33,891	11,359	21,968	42,644	83,783	anaidino X	TBD
<u>a.</u>	(FE 2/131F) Project 674809		İ	Pag	Page 2 of 5 Pages				Exhibit R-2 (F	Exhibit R-2 (PE 0207131F)

RDT&E BUDGET ITEM JUSTI	STIFICATION SHEET (R-2 Exhibit)	SHEET (R-2 Exhi	bit)	DA	DATE February 2000	v 2000
вирсет Астіvіту 07 - Operational System Development		PE NUMBER AND TITLE 0207131F A-10	AND TITLE F A-10 SQ	A-10 SQUADRONS			PROJECT 674809
(U) BDT&E (PE 64270F) (U) RDT&E (PE 64270F) (U) RDT&E (PE 64270F) (U) RDT&E (PE 64270F) (U) RDT&E (PE 64270F)	EY 2001 Estimate 2,000	EX 2002 Estimate 1,000	FY 2003 Estimate 0	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
(U) E. Acquisition Strategy The Integrated Flight and Fire Control Computer (IFFCC), Digital Terrain System (DTS), On-Board Oxygen Generating System (OBOGS), Digital Data Link (DDL), Common Data Link, and 1760 BUS development will be conducted under the A-10 Prime Contract which was awarded in Dec 1997 on a full-and-open basis. CPAF contract awarded for specific modernization efforts.	Digital Terrain S nducted under th	ystem (DTS), (ne A-10 Prime (On-Board Oxy Contract which	gen Generatin; 1 was awarded	g System (OBC in Dec 1997 or	OGS), Digital Dat n a full-and-open	a Link (DDL), basis. CPAF
(U) F. Schedule Profile		Y 199		FY 2000	000	<u>₹</u>	m FY~2001
(U) Integrated Flight and Fire Control Computer (IFFCC) upgrade RDT&F	l de	C *	4	1 2	٤ 4	1 2	4
(U) Digital Terrain System (DTS)(U) Common Data Link				×		×	_
Project 674809	Pag	Page 3 of 5 Pages				Exhibit R-2 (PE 0207131F)	E 0207131F)

	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	SRAM ELE	:MENT/PI	ROJECT C	OST BR	EAKDOV	VN (R-3)		DATE F e	February 2000	8
1 6	вирсет аститту 07 - Operational System Development	Developme	nt		PE NUMBER AN 0207131F		ID TITLE A-10 SQUADRONS	NS		9	РРОЈЕСТ 674809
9	A. Project Cost Breakdown (\$ in Thousands)	ı (\$ in Thousan	(Sp			-	EV 1000	000	000C X3	9	EV 2001
99	Integrated Flight and Fire Control Computer (IFFCC) Digital Terrain System (DTS)	ontrol Computer	(IFFCC)				2,1	2,170 0,	4,181 0	31 1 2 0	4,411 4,204
333							2,1	0 2,170	3,832 8,013	3 7 6	8,615
3	B. Budget Acquisition History and Planning Information (\$ in Thousands)	ory and Plannin	g Information	ı (\$ in Thousand	S						
9	_	(
	Contractor or Government	Contract Method/Tyne	Award or	Performing	Project						
	Performing	or Funding	Obligation	Activity	Office	Total Prior	Budget	Budget	Budget	Budget to	Total
	Activity Vehicle Product Development Organizations	<u>Vehicle</u>	Date	EAC	EAC	to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
	Lockheed Martin	IFFCC	2099	10,000	10,762		2,170	4,181	4,411	0	10,762
	Federal Systems	A-10 Prime									
		Contract/ CPAF									
	Lockheed Martin Federal	Digital Terrain 2001	1 2001	TBD	TBD	0	0	0	4,204	Continuing	TBD
	Sysems	System (DTS) A-10 Prime									
		Contract									
	Lockheed Martin Federal	Onboard	2002	TBD	TBD	0	0	0	0	1,747	1,747
	Systems	Oxygen Generating									
		Systems									
	LMFS	Digital Data	2Q03	TBD	49,998	0	0	0	0	Continuing	TBD
	LMFS	Link (DDL) 1760 Bus	2004	TBD	12,000	0	0	0	0	Continuing	TBD
	Project 674809			Pag	Page 4 of 5 Pages	SS			Exhib	Exhibit R-3 (PE 0207131F)	07131F)

	RDT&E PROGRAM ELEMENT	MENT/PRO	SJECT C	OST BR	/PROJECT COST BREAKDOWN (R-3)	VN (R-3)		DATE Fe	February 2000	00
BUC 07	вирсет астилту 07 - Operational System Development	nt		PE NUMBER AN 0207131F		40 TITLE A-10 SQUADRONS	۸S		9	РРОЈЕСТ 674809
(E)	Performing Organizations Continued: Product Development Organizations LMFS Common Data 2Q00 Link Solution Support and Management Organizations Test and Evaluation Organizations	2000	TBD	3,832	0	0	3,832	0		3,832
()	Government Furnished Property: Contract Method/Type Item Or Funding Description Yehicle Product Development Property Support and Management Property	Award or Obligation De Date Da	<u>Delivery</u> Date		Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	<u>Total</u> Program
	Test and Evaluation Property Subtotals Subtotal Product Development				Total Prior to FY 1999 0	Budget FY 1999 2,170	Budget FY 2000 8,013	Budget FY 2001 8,615	Budget to Complete TBD	Total Program TBD
	Subtotal Support and Management Subtotal Test and Evaluation Total Project				0	2,170	8,013	8,615	TBD	TBD
	Project 674809		Pag	Page 5 of 5 Pages	es.			Exhib	Exhibit R-3 (PE 0207131F)	07131F)

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RDT&E BUDGET ITEM JU	JSTIFIC	ATION	STIFICATION SHEET (R-2 Exhibit)	(R-2 Ex	hibit)		DATE	Februa	February 2000
BUDGET ACTIVITY 07 - Operational System Development			PE NUMBEF 0207133	PE NUMBER AND TITLE 0207133F F-16 Squadrons	quadror	SI			PROJECT 672671
COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
672671 F-16 Squadrons	120,389	114,162	124,903	84,465	76,082	65,704	97,215	97,215 Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

A. Mission Description 9

primary aircraft in the surface attack role. The F-16C/D program develops, integrates, and qualifies systems to enhance the overall performance of the F-16 mission. single-seat, multirole tactical fighter with full air-to-air and air-to-surface combat capabilities. The F-16 complements the F-15 in counter-air missions and is the The F-16 fighter aircraft program satisfies the need for modernization of the USAF and allied multimission tactical fighter forces. The F-16 is a single-engine,

have been combined into a single modification known as the Common Configuration Integration Program (CCIP) to save significant costs during the production phase. The F-16 program develops enhanced combat capability in both the air-to-ground and air-to-air role. Several modifications to improve the F-16's combat capabilities CCIP will modify all Block 40 and Block 50 F-16 aircraft; Block 50 is the lead platform. CCIP integrates several programs under one umbrella and allows incorporation of AIM-9X onto the F-16:

battle management data. The Link 16 program designs the appropriate Group A (hardware mounted permanently on aircraft) to incorporate existing Group B (hardware a. The main driver for CCIP will be the Link 16 program. Link 16 is a data link that connects main components of a battle arena to maintain awareness and to share that is easily removed from airplane) developed by the Multifunctional Information Distribution System (MIDS) Office and adapted for use on the F-16.

b. To enhance the display of the Link 16 data, the current black and white display will be changed out with the Color Multifunction Display (CMFD) used by the European Participating Air Force's (EPAF) F-16s.

developed for the EPAF Mid-life Update program. The Block 50 F-16 is developing the MMC for USAF requirements. The MMC will extend the cost effective life of c. To have sufficient computing power in the Block 40/50 aircraft to operate Link16 and to allow the cost savings by using a common Operational Flight Program, the General Avionics Computer (GAC) must be replaced with the Modular Mission Computer (MMC). The MMC is an upgraded version of the computer that was the F-16 through replacement of three Line Replaceable Units and the addition of significant memory and processing growth provisions.

d. The Joint Helmet Mounted Cueing System (JHMCS) incorporates a man-mounted, ejection capable helmet mounted display system, with the capability to cue and tracker hardware and software. The integration will interface with aircraft computers, weapons and sensor hardware and will provide software to integrate the JHMCS verify cueing of high off-axis sensors and weapons. The F-16 JHMCS program will integrate the following government furnished equipment with the F-16: flight helmet with display optics, image source, helmet tracker transducer w/attached cable, graphics processor/video hardware and software to drive the display, helmet functions with other onboard systems.

Project 672671

Page 1 of 8 Pages

Exhibit R-2 (PE 0207133F)

	RDT&E BUDGET ITEM JUSTIF	STIFICATION SHEET (R-2 Exhibit)	DATE February 2000
BUD.	вирсет астилту 07 - Operational System Development	PE NUMBER AND TITLE 0207133F F-16 Squadrons	PROJECT 672671
()	A. Mission Description Continued Other modifications which are being or will be developed during the FYDP: a. Advanced Weapons Integration will integrate Joint Direct Attack Munition (JDAM), Joint Stand-off Weapon (WCMD) smart weapons into the Block 40 and Block 50 F-16. b. Global Positioning System (GPS) Integration adds GPS capability to the Block 30 and supports testing of GPS The F-16C/D development efforts are complemented by comprehensive Operational Flight Program (OFP) upgrate a targeting pod on the Block 50/52 and transition the HARM Targeting System (HTS) pod to the left perform the SEAD/DEAD mission. d. The Mark XII IFF system (Air-to-Air Interrogator) consists of a single unit interrogator/transponder, a beam for elements, and a lower interrogator antenna. The system provides a higher reliability rate and increases performan coverage of + or - 60 degrees azimuth and elevation coverage with a + or - 2 degree accuracy, a range accuracy can be handled. Modes 1, 2, 3/A, C, S, and 4 are available. e. Structural analysis from the on-going Structural Integrity Program (SIP) has indicated that the F-16 is experie the airframes to reach their 8,000 hrs service life. RDT&E funds are required to design the required structural maircraft. This program, Falcon Star, (RDT&E only) will be cost shared with the Multi-National Fighter Program (MNFP) countries. f. The Auto Ground Collision Avoidance System (AGCAS) program is presently a Air Force Research Laborati in FY01 is required to begin the transition of the program to Engineering Manufacturing & Development (EMD) which included continued flight testing of the capability available from the research program and initial design a solutions for an automatic ground collision avoidance system.	A. Mission Description Continued Other modifications which are being or will be developed during the FYDP: a. Advanced Weapons Integration will integrate Joint Direct Attack Munition (JDAM), Joint Stand-off Weapon (JSOW) and Wind Corrected Munition Dispenser (WCMD) smart weapons into the Block 40 and Block 50 F-16. b. Global Positioning System (GPS) Integration adds GPS capability to the Block 30 and supports testing of GPS changes to other F-16 Blocks. The F-16C/D development efforts are complemented by comprehensive Operational Flight Program (OFP) upgrades and flight tests. The F-16C/D development efforts are complemented by comprehensive Operational Flight Program (OFP) upgrades and flight tests. The F-16C/D development efforts are complemented by comprehensive Operational Flight Program (OFP) upgrades and flight tests. The F-16C/D development efforts are complemented by comprehensive Operational Flight Program (OFP) upgrades and flight tests. The F-16C/D development efforts are complemented by comprehensive of a single unit interrogator/transponder, a beam forming network, fuselage-mounted array antenna dements, and a lower interrogator antenna. The system provides a higher reliability rate and increases performance over present systems. Initial capabilities include elements, and a lower interrogator antenna. The system provides a higher reliability rate and increases performance over present systems. Initial capabilities include coverage of + or-60 degrees azimuth and elevation coverage with a + or-2 degree accuracy of 152 meters and range of 100 mm; 32 in beam targets can be handled. Modes 1, 2, 3A, C, S, and 4 are available. Structural analysis from the one-going Structural Integrity Program (SIP) has indicated that the F-16 is experiencing structural malysis from the nerson (MDFP) countries. Structural analysis from the oregoing Structural Integrity Program is presently a Air Force Research Laboratory (AFRL) led flight test program. The funds available from the research program and initial design and	orrected Munition Dispenser 16 Blocks. Is will allow the F-16 Block 50 to elage-mounted array antenna ems. Initial capabilities include inge of 100 nmi. 32 in beam targets upe that may impact the ability of opriate for each F-16 Block of used for risk reduction efforts obtential hardware and software
	The F-16, which received Milestone III approval in FY 1977,	1977, is an operational aircraft.	
69696966	\$20,085 Continued Link 16 Block 40/50 \$20,085 Continued Link 16 Block 40/50 \$6,255 Continued Block 40 Color Display Development/Integration \$1,300 Continued Modular-Mission Computer (MMC) Block 40 \$3,928 Continued Training Devices (Unit Only) \$43,279 Continued OFP Updates \$1,215 Completed Smart Weapons Integration	Continued Link 16 Block 40/50 Continued Link 16 Block 40/50 Continued Joint Helmet Mounted Cueing System (JHMCS) Block 40/50 (formerly AIM-9X development) Continued Block 40 Color Display Development/Integration Continued Modular-Mission Computer (MMC) Block 40 Continued Training Devices (Unit Only) Continued OFP Updates Completed Smart Weapons Integration	
D.	Project 672671	Page 2 of 8 Pages	Exhibit R-2 (PE 0207133F)

	RDT&E	RDT&E BUDGET ITEM JUSTIFICATION S	STIFICATION SHEET (R-2 Exhibit)	DATE February 2000
- 20	вирдет астилту 07 - Operational System Development		PE NUMBER AND TITLE 0207133F F-16 Squadrons	PROJECT 672671
<u>(£</u>	A. Mission Description Continued			
23333	EY 1999 (\$ in Thousands) Continued \$2,431 Continued Blo \$27,841 Continued Flig \$1,400 Completed AL \$120,389 Total	nds) Continued Continued Block 30 GPS Integration Activities Continued Flight Tests DT&E Completed ALE-50 - Congressional Kosovo Plus Up Total		
222222222222222222222222222222222222222	EY 2000 (\$ in Thousands) \$14,472	Complete Block 50 Link 16, Continue Block 40 Complete Block 50 JHMCS, Continue Block 40 Continue Block 40 Color Display Development/Integration Continue Block 40 MMC Continue Block 40 MMC Continue OFP Updates Continue Flight Tests DT&E Total Ids) Continue Block 40 Link 16 Continue Block 40 JHMCS Continue Block 40 JHMCS Continue Block 40 MMC Continue Block 50 HTS/TGP Capability (Software development, design, test assets) Initiate Joint Tactical Combat Training System (JTCTS) Initiate Block 50 HTS/TGP Capability (Software development, design, test assets) Initiate Falcon Star (Structural analysis and design) Initiate Auto GCAS (Risk reduction)	on on	
<u>Ф</u>	Project 672671	Page 3 (Page 3 of 8 Pages	Exhibit R-2 (PE 0207133F)

	RDT&E BUDGET ITEM JU	GET ITE		CATION	STIFICATION SHEET (R-2 Exhibit)	(R-2 Exh	ibit)	Δ	DATE February 2000	, 2000
97.	вирсет астилту 07 - Operational System Development	velopment			PE NUMBER AND TITLE 0207133F F-16	PE NUMBER AND TITLE 0207133F F-16 Squadrons	uadrons			PROJECT 672671
9	B. Budget Activity Justification Since the development activities in this PE support an activity 7.	n in this PE supl	oort an operati	onal aircraft, tl	nese developm	ent activities a	re funded in th	e Operational	operational aircraft, these development activities are funded in the Operational System Development budget	ent budget
9	C. Program Change Summary (\$ in Thousands)	(\$ in Thousa	(spu			FY 1999	FY 2000		FY 2001	Total Cost
93	Previous President's Budget (FY 2000 PBR)	. 2000 PBR)				139,631	112,520	4	93,058	TBD
3 (3	Appropriated Value Adjustments to Appropriated Value	ılue				140,076	115,25			
	a. Congressional/General Reductions	tions				-49	-10	0		
_	b. Small Business Innovative Research C. Omnibus or Other Above Threshold Remogram	search eshold Reprogr	es.			-4,274	109-	_		
	d. Below Threshold Reprogram	Sorday Projec				-2,109	7			
	e. Rescissions					-1,069	-721			
9	f. Other Adjustments to Budget Years Since FY 2000 PBR	nce FY 2000 P	BR					Э	31,845	TBD
9	Current Budget Submit/FY 2001 PBR Note: \$600 of the BTR amount of \$2,109 used to pay	PBR of \$2,109 used	to pay cancel	canceled year bill		120,389	114,162		124,903	TBD
<u>(a)</u>	Significant Program Changes: FY99: 'Omnibus or Other Above Threshold Reprogram' includes transfer of \$14.486M to BP10 for advance procurement for 10 aircraft in FY 00 and receipt of the \$2.3M from the emergency supplemental fund (\$1.4M of 3600 funds for ALE-50 flight test, \$.9M exchanged for 3400 funds for ALE-50 OFP development.) FY 00: \$3,000 Congressional plus up for Air Interrogator development for Block 50 Aircraft. FY01: \$31,845 increase to 'Adjustments to Budget Years Since FY2000 PBR' is for AAI, Blk 50 HTS/TGP capability, Falcon STAR, and Auto GCAS.	e Threshold Re blemental fund us up for Air to ustments to Bu	eprogram' incl (\$1.4M of 360 Air Interrogal dget Years Sin	udes transfer o 10 funds for AI tor developme ce FY2000 PB	m' includes transfer of \$14.486M to BP10 for of 3600 funds for ALE-50 flight test, \$.9M errogator development for Block 50 Aircraft. ars Since FY2000 PBR' is for AAI, Blk 50 H	BP10 for adv t, \$.9M excha Aircraft. Blk 50 HTS/T	ance procurem nged for 3400 : 'GP capability,	ent for 10 airc funds for ALE Falcon STAR	n' includes transfer of \$14.486M to BP10 for advance procurement for 10 aircraft in FY 00 and receir of 3600 funds for ALE-50 OFP development.) errogator development for Block 50 Aircraft. ars Since FY2000 PBR' is for AAI, Blk 50 HTS/TGP capability, Falcon STAR, and Auto GCAS.	eceipt of the lent.)
9	D. Other Program Funding Summary (\$ in Thousands)	mmary (\$ in T	housands)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to	Total Cost
5	,	Actual 41 100	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	ten land
9	(3010F), Line Item 5; F-16	41,109	707,107	>	>	103,973	196,363	203,049		180
9	Aircraft Procurement	256,402	283,060	248,830	255,311	246,082	240,827	193,072		TBD
_	Project 672671			Pag	Page 4 of 8 Pages				Exhibit R-2 (PE 0207133F)	E 0207133F)

	RDT&E BUDGET ITEM JU		ICATION	STIFICATION SHEET (R-2 Exhibit)	(R-2 Exh	ibit)		DATE Feb	February 2000	8
8UD 07	вирсет астилту 07 - Operational System Development	t		PE NUMBER AND TITLE 0207133F F-16	PE NUMBER AND TITLE 0207133F F-16 Squadrons	uadrons			9	РРОЈЕСТ 672671
(C)	D. Other Program Funding Summary (\$ in Thousands) FY 1999 FY 2000 Actual Estimate	Thousands) FY 2000 Estimate	EY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	EY 2004 Estimate	FY 2005 Estimate	Cost to Complete	<u>to</u> lete	Total Cost
5	(3010F), Line Item 34, F-16 Mods Aircraft Procurement 36,634 43,932 25,464 15,500 15,705 13,861 14,340 TBD (3010F), Line Item 73, Post Production Support * 3010F, Line Item 5 Program Funding for FY00, FY03-05, is for force structure aircraft, 10 A/C in FY 00, 6 A/C in FY 03, FY 04-FY 05 7 A/C in each respective year.	43,932 700, FY03-05, is	25,464	15,500 cture aircraff, 1	15,705 10 A/C in FY (13,861 00, 6 A/C in F	14,340 Y 03, FY 04-F	'Y 05 7 A/C	in each resp	TBD ective year.
(£)	E. Acquisition Strategy The procurement of 30 additional Blk 50/52 aircraft, 10 FY00/6 FY03/7 FY03/7 FY04, for the active force will enable the AF to replace the Blk 10/15 F-16 A/B aircr of two Air National Guard (ANG) Air Defense Fighter (ADF) squadrons with newer, more capable Blk 30 F-16 C/D aircraft from the active fleet. RDT&E funds will primarily be executed in developing improved capability, maintenance and safety mods. Operational Flight Program (OFP) software will be continuously updated to complement mod development efforts. The approach to contracting varies by individual project. Lockheed Martin Tactical Aircraft Systems (LMTAS) is the prime contractor on all systems except the simulator/trainer (Hughes Co.), the 110 Engines (General Electric), and the 229 Engines (Pratt & Whitney). Contract types are CPIF, CPFF, FFP.	rcraft, 10 FY00// Fighter (ADF) : capability, main proach to contra rainer (Hughes t	6 FY03/7 FY0 squadrons with tenance and sa cting varies by Co.), the 110 I	13/7 FY04, for h newer, more afety mods. O y individual professioners (General Angines (Gen	the active for capable Blk 3 perational Flig oject. Lockheral Electric), 3	FY00/6 FY03/7 FY03/7 FY04, for the active force will enable the AF to replace the Blk 10/15 F-16 A/B aircraft (ADF) squadrons with newer, more capable Blk 30 F-16 C/D aircraft from the active fleet. RDT&E funds will y, maintenance and safety mods. Operational Flight Program (OFP) software will be continuously updated to contracting varies by individual project. Lockheed Martin Tactical Aircraft Systems (LMTAS) is the prime tughes Co.), the 110 Engines (General Electric), and the 229 Engines (Pratt & Whitney). Contract types are	the AF to repl craft from the FP) software tical Aircraft \$ gines (Pratt &	lace the Blk active fleet. will be conti	10/15 F-16 / . RDT&E fu inuously upd (TAS) is the Contract ty	VB aircraft nds will ated to prime ses are
<u>(</u>	E. Schedule Profile		-	FY 1999 2 3	4	EY 2	FY 2000 2 3 4		FY 2001 2 3	4
23333333	CONTRACT MILESTONES Blk 30 GPS Integration Activities Advanced Weapons Integration Dev LANTIRN BDA Block 50 HTS/TGP Capability Falcon Star Auto GCAS JTCTS AAI				× *	× .				
α.	Project 672671		Pag	Page 5 of 8 Pages				Exhibit	Exhibit R-2 (PE 0207133F)	07133F)

	RDT&E PROGRAM ELEMENT		/PROJECT COST BREAKDOWN (R-3)	OST BRE	\KDOW	'N (R-3)		DATE Fe	February 2000	
8UD	вирбет астіvіту 07 - Operational System Development	evelopment		PE NUMBER AND TITLE 0207133F F-16 9	иртπ∟е F-16 Squadrons	uadrons			P. 9	PROJECT 672671
(D)	A. Project Cost Breakdown (\$ in Thousands)	§ in Thousands)								
תח	I ink 16 Block 50					FY 1999 14 633	প্ল হ	EY 2000 9 186	0 1 v	FY 2001
3	Link 16 Block 40					5,452	52	5.286		5,000
3	MMC Block 40					10,300	00	8,286	0	5,000
3	Color Display Block 40					3,655	55	586		1,500
9	JHMCS Block 50					4,500	00	4,885	10	0
9	JHMCS Block 40					1,755	55	4,885	10	4,300
9	Training Devices					3,928	28	2,450	•	11,351
9	Smart Weapons Integration					1,215	15	0	_	0
3	Block 30 GPS Integration					2,431	31	888	do.	0
9	OFP Updates (Includes AAI)					42,549	49	46,653	~	54,955
9	Block 42 IDM Integration					9	630	0	_	0
9	Flight Tests DT&E					27,841	41	31,057	_	32,447
9	Joint Tactical Combat Training System	System					0	0	_	009
9	LANTIRN BDA					<u> </u>	100	0	_	0
3	Block 50 HTS/TGP Capability (Software development,		design, test assets)				0	0	_	3,250
9	Falcon Star (Structural analysis and design)	and design)					0	0	_	1,500
9	Auto GCAS (Risk reduction)						0	0	_	5,000
9	ALE-50					1,400	00			
3	Total					120,389	68	114,162	61	124,903
9	B. Budget Acquisition History and Planning Informs	and Planning Informatic	ation (\$ in Thousands)	ସ						
9	Performing Organizations: Contractor or	Contract Method/Twne Award or	Performing	Project						
			Activity		Total Prior	Budget FV 1990	Budget FV 2000	Budget FV 2001	Budget to	Total
B. W. J.				-				1000		TO STORY
LIL.	Project 672671		Page	Page 6 of 8 Pages				Exhibi	Exhibit R-3 (PE 0207133F)	7133F)

	RDT&E PROGRAM ELEMEN	RAM EL!	EMENT/PF	I/PROJECT C	COST BREAKDOWN (R-3)	EAKDOV	VN (R-3)		DATE F	February 2000	00
BUI 07	вирсет астилту 07 - Operational System Development	Jevelopme	ınt.		PE NUMBEI 020713 3	PE NUMBER AND TITLE 0207133F F-16 Squadrons	juadrons			9 9	РРОЈЕСТ 672671
(D)	Performing Organizations Continued:	Ontinued:									
	Product Development Organizations	zations									
	CCIP	T&M	Feb 97	5,384	5,384	5,384				0	5,384
	(LMTAS)										
	Link 16 Blk 50 (LMTAS)	SS/CPIF	Apr 98	29,446	29,446	5,627	14,633	9,186		0	29,446
	Link 16 Blk 40 (LMTAS)	SS/CPIF	Apr 98	17,538	17,538	1,800	5,452	5,286	5,000	0	17,538
	MMC Blk 50 (LMTAS)	SS/CPIF	Jan 92	172,530	172,530	172,530				0	172,530
	MMC Blk 40 (LMTAS)	SS/CPIF	Apr 98	26,086	26,086	2,500	10,300	8,286	5,000	0	26,086
	Color Display Blk 50	SS/CPIF	Apr 98	650	650	650				0	650
	(LMTAS)										
	Color Display Blk 40	SS/CPIF	Apr 98	7,541	7,541	1,800	3,655	586	1,500	0	7,541
	(LMTAS)										
	JHMCS BIk 50 (LMTAS)	SS/CPIF	Apr 98	10,385	10,385	750	4,500	4,885		0	10,135
	JHMCS Blk 40 (LMTAS)	SS/CPIF	Apr 98	11,940	11,940	750	1,755	4,885	4,300	0	11,690
	JHMCS Int Study (LMTAS)	SS/CPFF	Apr 98	4,458	4,458	4,458				0	4,458
	AIM/9X	CPAF	Apr 98	115	115	115				0	115
	(LMTAS)										
	AAI BIk 50 (LMTAS)	SS/CPIF	Aug 99	6,590	6,590	0	2,990	5,691			8,681
	Trainers	FFP	Apr 97	44,979	44,979	14,663	3,928	2,450	11,351	0	32,392
	(Hughes)										
	Smart Wpns (LMTAS)	CPIF	Dec 95	TBD	TBD	8,700	1,215			0	9,915
	GPS Integration (Various)	Various	Jul 97	20,200	20,200	15,231	2,431	888		0	18,550
	OFP Updates (LMTAS)	CPIF/T&M	Dec 95	TBD	TBD	114,007	39,292	40,544	54,955	Continuing	TBD
	IDM BIK 42 (LMTAS)	FP	Nov 98	0/9	029	0	630			0	630
	JTCTS	TBD	TBD	TBD	TBD				009	1,200	1,800
	(TBD)										
	F-16 A/B SLEP	TBD	TBD	TBD	TBD		0			0	0
	LANTIRN BDA						100				100
	Block 50 HTS/TGP								3,250		3,250
	Capability										
	Falcon Star								1,500		1,500
_	Project 672671			Pag	Page 7 of 8 Pages	S			Exhib	Exhibit R-3 (PE 0207133F))7133F)

PENUMBER AND TITLE	RDT&E PROGRAM ELEMENT/PROJ	/PROJECT COST BREAKDOWN (R-3)	REAKDO!	WN (R-3)		DATE Fe	February 2000	8
Performing Organizations Auto GCAS Performing Organizations 1,400 Auto GCAS 1,400 1,400 Support and Management Organizations 447 267 ALR-56M Support 280 47 267 Radar Eval 40 40 40 Halon Eval 122,90 122,90 2,296 Flight Tests Continuing Continuing 850 850 Flight Tests Continuing Continuing 22,91 27,841 Flight Tests Continuing Association 850 850 Subtotals Association 126,137 27,841 267 Subtotal Product Development Af75,869 120,389 1 Subtotal Project Total Project 27,841 267 Subtotal Project 126,137 27,841 27,841 Total Project 126,137 27,841 27,841	зирсет астіvity 07 - Operational System Development	PE NUMBI 020713	ER AND TITLE 33F F-16 S	quadrons			. 9	РРОЈЕСТ 672671
447 267 280 40 40 Continuing Continuing 122,991 27,841 Continuing Continuing 850 Total Prior Budget to FY 1999 FY 1999 T67 267 126,137 27,841 475,869 120,389 1				1,400		5,000		5,000
2,296 Continuing Continuing 122,991 27,841 Continuing Continuing 850 Total Prior Budget to FY 1999 FY 1999 F 126,137 27,841 475,869 120,389 1	ALR-56M Support Radar Eval Halon Eval Test and Evaluation Organizations		447 280 40	267	418	0	Continuing 0	TBD 280 40
Total Prior Budget to FY 1999 FY 1999 F 348,965 92,281 767 267 126,137 27,841 475,869 120,389 1			2,296 122,991 850	27,841	31,057	32,447	0 Continuing	2,296 TBD 850
348,965 92,281 767 267 126,137 27,841 475,869 120,389	Subtotals Description		Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
	Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project		348,965 767 126,137 475,869	92,281 267 27,841 120,389	82,687 418 31,057 114,162	92,456 0 32,447 124,903	TBD TBD TBD TBD	TBD TBD TBD TBD
Project 672671	Project 672671	Page 8 of 8 Pag	ses			Exhib	Exhibit R-3 (PE 0207133F)	77133F)

X	RDT&E BUDGET ITEM JU		ATION	SHEET	STIFICATION SHEET (R-2 Exhibit)	(hibit)		DATE	February 2000	ry 2000
BUDGET ACTIVITY 07 - Operationa	обет АСТІVITY - Operational System Development	:		PE NUMBER 020713 4	PE NUMBER AND TITLE 0207134F F-15E SQUADRONS	SQUAD	RONS			PROJECT 670131
00	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
670131 Initial Opera	Initial Operational Test and Evaluation	100,974	126,172	61,260	100,865	68,582	94,367	87,859	Continuing	TBD
Quantity of F	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0
(U) A. Mission Description The F-15E is the most verand arrive combat-ready. meet the requirement for a be improved to maintain it capabilities. Avionics upoand fully integrated electroactivities for PE 0207130f (U) \$43,746 (U) \$531,106 (U) \$521,106 (U) \$521,106 (U) \$5,540 (U) \$7,540 (U) \$7,540 (U) \$7,540 (U) \$5,343 (U) \$6,070 (U) \$5,343 (U) \$5,343 (U) \$5,344 (U) \$5,340 (U) \$7,800 (U) \$5,340 (U) \$5,340 (U) \$5,340 (U) \$5,340 (U) \$5,340 (U) \$7,800	The F-15E is the most versatile fighter in the world today. Configured with conformal finel tanks (CFTs), the F-15E can deploy worldwide with minimal tanker support and arrive combar-ready. The F-15E retains air supporting capability and adds systems, such as Low Altitude Navigation Targeting Infrared for Night (LANTIRN), to meet the requirement for all-testins air superiority capability and adds systems, such as Low Altitude Navigation Targeting Infrared for Night (LANTIRN), to meet the requirement for all-weather, deep penetration, and night/under-the-weather, air-to-surface attack. The F-15E avionics, armanent, airframe, and engines must be improved to maintain its superiority against the threat into the next century. The threat includes a new generation of aircraft possessing all-weather deepton and kill supported to maintain its superiority against the threat into the next century. The threat includes a new generation of aircraft possessing all-weather deepton and kills integrated electronic warfare suite. This will increase the offensive capability and survivability of the F-15E. The F-15E PE also funds RDT&E and hally integrated electronic warfare suite. This will increase the offensive emphality and survivability of the F-15E. The F-15E PE also funds RDT&E Continued OFP development of the APC-63 radar Continued development of the Link-16 Data Link for the F-15E. S5340 Continued development of the APC-15 Band 1.5. Continued development of the APD Band 1.5. S4,695 Continued development of the APD Band Processor (ADP) Upgrade. Continued development of the APD Band Processor (ADP) Upgrade. S5,343 Initiated development of the APD Band Processor (ADP) Upgrade. Continued development of the APD Band Processor (ADP) Upgrade. S1,007 Continued development of the APD Band Processor (ADP) Upgrade. S1,009 Continued development of the APD Band Processor (ADP) Upgrade. S1,009 Continued Development of the APD Band Processor (ADP) Upgrade. S1,009 Continued Development of the APD Band Processor (ADP) Upgrade. T	day. Configured with conformal ority capability and adds systems it, and night/under-the-weather, air and night/under-the-weather, air at into the next century. The thrunological advances) will be incon I increase the offensive and defensive and flight testing of improveme. Link-16 Data Link for the F-15E. ALQ-135 Band 1.5. ted to DMS (Obsolete Parts) Combat ID System IHMCS. r Data Processor (ADP) Upgrade. Weapons (formerly PACS upgrade, rade.	ured with c lity and adc ander-the-w lext century lvances) wi e offensive cesting of in a Link for t and 1.5. (Obsolete P System ssor (ADP) ormerly PA	onformal furils systems, seather, air-trather incorporand defensivand defensivants (CS upgrade.	lay. Configured with conformal fuel tanks (CFTs), the F-1: ority capability and adds systems, such as Low Altitude Na, and night/under-the-weather, air-to-surface attack. The F-at into the next century. The threat includes a new generat nological advances) will be incorporated into the F-15E proincrease the offensive and defensive capability and surviva increase the offensive and defensive radar. Forts. Forts. Link-16 Data Link for the F-15E. ALQ-135 Band 1.5. ed to DMS (Obsolete Parts) Combat ID System HMCS. r Data Processor (ADP) Upgrade. Weapons (formerly PACS upgrade) capability into F-15E rade	Ts), the F-15 Altitude Navack. The F- new generati te F-15E pro and surviva prior years.	E can deple rigation Tar 15E's avion on of aircral viding expa	y worldwid geting Infra ics, armamer it possessing inded capabil F-15E. The	e with minim red for Night nt, airframe, a sall-weather lity and supp r. F-15E PE al	al tanker support (LANTIRN), to and engines must detection and kill orting an updated so funds RDT&E
Project 670131			Page	Page 1 of 7 Pages	S				xhibit R-2 (Exhibit R-2 (PE 0207134F)

	RDT&E BU	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhibit)	ге February 2000
- 20 Sana	вирсет астилту 07 - Operational System Development	evelopment	PE NUMBER AND TITLE 0207134F F-15E SQUADRONS	PROJECT 670131
(വ)	A. Mission Description Continued	<u>inued</u>		
<u>(</u>	(\$ in Thousar			
99	\$37,022 Continu \$20,849 Continu	Continue OFP development efforts. Continue flight test of the OFP and flight testing of improvements initiated in prior years.	improvements initiated in prior years.	
9		Continue development of Advanced Display Core Processor (ADCP) (formerly OFP effort)	rocessor (ADCP)(formerly OFP effort)	
39	_	Continue integration of the Smart weapons [totnierly FACS upgrade]. Continue developments attributed to DMS. (Obsolete Parts)	ry rACS upgravej. te Parts)	
9		Continue development of the Combat ID System.		
38	\$1,510 Comple	Continue integration of the JITMCS. Complete upgrade of the Air Data Processor (ADP).		
9		Continue TISS Computer Upgrade		
<u> </u>	\$15,000 Initiate funded	Initiate development of Electronic Counter-countermeasures (ECCM) - 3 year project fully funded with FY 2000 congressional add	neasures (ECCM) - 3 year project fully	
99	\$3,944 Continu \$126,172 Total	Continue development of the ALQ-135 Band 1.5 Total		
<u>e</u>	FY 2001 (\$ in Thousands)			
9		Continue OFP development efforts.		
3 (3	\$20,030 Continu	Continue ingui test of the Orr and ingui testing of improvements initiated in prior years. Continue integration of the Smart Weapons.	mpiovements muated in prior years.	
9		Continue developments attributed to DMS. (Obsolete Parts)	te Parts)	
<u>3</u>		ie developinient of the Comoat 1D System.		
<u>e</u>	B. Budget Activity Justification The F-15E, which received contract award approval in		FY84, is an operational aircraft and therefore the development activities in the Program Element are included in	rogram Element are included in
	Budget Activity 7, Operational Systems Development.		•)
ď	Project 670131	Pa	Page 2 of 7 Pages	Exhibit R-2 (PE 0207134F)

	RDT&E BUDGET ITEM JU	_	ICATION	SHEET	STIFICATION SHEET (R-2 Exhibit)	bit)	۵	DATE February 2000	ry 2000
BUC 07	BUDGET ACTIVITY O7 - Operational System Development			PE NUMBER AND TITLE 0207134F F-15E	AND TITLE F F-15E S	4D TITLE F-15E SQUADRONS	S)		PROJECT 670131
(D)	C. Program Change Summary (\$ in Thousands)	(spu			FV 1000	000C XH		FV 2001	Total Coet
99	Previous President's Budget (FY 2000 PBR) Appropriated Value				103,857	112,670 127,670		100,330	1000
<u>(£)</u>	Y et 1				-56	-10	0		
	 b. Small business innovative Research c. Omnibus or Other Above Threshold Reprogram d. Below Threshold Reprogram e. Rescissions 	ram			-4,115 1,797 -859	-693	ب ع		
99		'BR			100,974	126,172	·	-39,070 61,260	TBD
<u> </u>	Significant Program Changes: Funding (FY00): Smart Weapons \$15,810 - In FY00 the Smart Weapons/PACS will develop and complete the design for the Smart Weapons software. Scheduled milestones during this period are Preliminary Design Review and Critical Design Review.	Weapons/PAC; Critical Design	S will develop Review.	and complete	the design for	the Smart We	apons softwar	e. Scheduled mil	estones during
	Advance Display Core Processor (ADCP) \$18,405 - ADCP development funding for FY00 will fund initial contract award of ADCP box. Previous RDOCS submissions combined ADCP-associated OFP effort in the ADCP line; this submission moves the OFP effort to the OFP funding line. Electronic Counter-Countermeasures (ECCM) \$15,000 - Congressional add; one year of funding for three (3) year Study Phase and EMD effort. ALQ-135 Band 1.5 \$3,944 - Program restructure extends program into FY00 Funding (FY01):	4,405 - ADCP d effort in the Al \$15,000 - Cong	evelopment fu DCP line; this ressional add; am into FY00	nding for FY0 submission m ; one year of fi	00 will fund ini oves the OFP of Inding for three	tial contract av effort to the Ol e (3) year Stuc	ward of ADCF FP funding lin ly Phase and E	box. Previous Rec.	DOCS
<u> </u>		Air Force priori Chousands) FY 2000	ties. FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to	Total Cost
555	AF RDT&E Other APPN Aircraft Procurement (3010F), Line Item 5, F-15E	Estimate 291,607	Estimate	<u>Estimate</u>	Estimate	Estimate	Estimate	Complete	
	Project 670131		Pag	Page 3 of 7 Pages				Exhibit R-2 (Exhibit R-2 (PE 0207134F)

	RDT&E BUDGET ITEM JU	GET ITE	M JUSTIF	CATION	STIFICATION SHEET (R-2 Exhibit)	'R-2 Exh	ibit)		DATE Exhrusty 2000	2000
BUE 07	вирсет астіліту 07 - Operational System Development	velopment			PE NUMBER AND TITLE 0207134F F-15E	AND TITLE	P-15E SQUADRONS	is l	- 60	9 2000 PROJECT 670131
9	D. Other Program Funding Summary (\$ in Thousands) EY 1999 EY 1999 Artingle	mmary (\$ in T FY 1999	Thousands) EY 2000 Estimate	FY 2001 Estimata	FY 2002 Estimate		FY 2004		Cost to	Total Cost
į		The state of the s	Amminor	Samuare	Command		Estimate	Esumate	Complete	
9	Aircraft Procurement (3010F), Line Item 27, F-15A-E (PEs 27130F and	233,832	308,907	258,247	249,136	258,529	263,179	103,263	Continuing	
<u>(</u>	–	0	0	0	32	21,069	21,713	22,193	Continuing	
<u> </u>	(PE27442F) [IDECM] Aircraft Procurement (3010F), Line Item 66, F-15A-E [BP 13]	6,871	7,184	7,267	7,349	7,561	7,787	7,959	Continuing	
9	E. Acquisition Strategy Program is a continuation of effort which includes the development of all F-15 models. Funds are executed organically in support of equipment improvement, study, analysis, and test.	rt which includ	es the develop	ment of all F-1	15 models. Fun	ds are execute	ed organically	in support of e	quipment improve	ment, study,
<u> </u>	F. Schedule Profile				EY 1999		FX 2000	000	FY	FY 2001
5555	JHMCS Operational Testing start Smart Weapons EMD start Smart Weapons DT&E start OFP Suite 4 complete			-	* * 3	4	1 2	4	1 2	£ X
233333	OFP Suite 4 VHSIC Central Computer Critical Design Review OFP Suite 5 Phase I complete OFP Suite 5 Phase II complete ADCP COSSI tasks complete ADCP EMD start APG-63 IOT&E complete	puter Critical	Design Review		*		× × *		××	4
<u> </u>	Project 670131			Pag	Page 4 of 7 Pages				Exhibit R-2 (PE 0207134F)	'E 0207134F)

	RDT&E BUDGET ITEM JUSTIFICATION	STIFICATION SHEET (R-2 Exhibit)		DATE Fet	February 2000	
97 04	BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0207134F F-15E SQUADRONS	NS		PROJECT 67013 1	ст 31
<u> </u>	F. Schedule Profile Continued	661 X		,	X 200	
<u> </u>	APG-63 OT flight test complete Link-16 flight test start Link-16 flight test complete Combat ID DT start ALQ-135, Band 1.5 DT start ALQ-135, Band 1.5 DT vart ALQ-135, Band 1.5 DT/OT start TISS Computer Upgrade EMD complete Air Data Processor EMD start Air Data Processor EMD complete ECCM Study Phase start ECCM Study Phase complete ECCM Study Phase start ECCM EMD start	7 * * * * * 4	~ ×	- ××	n	4 X
Lalia	Project 670131	Page 5 of 7 Pages		Exhibit	Exhibit R-2 (PE 0207134F)	(F)

BUDGET ACTIVITY 07 - Operations (U) A. Project Co (U) Flight Test (U) OFP				5	こうこうこう			_	repruary 2000	- 00
(U) A. Project Co (U) Flight Test (U) OFP	DGET ACTIVITY - Operational System Development	ent		PE NUMBER AN 0207134F		ID TITLE FOUNDEONS	SNC	:	9	PROJECT 670131
	A. Project Cost Breakdown (\$ in Thousands)	(spu						:	:	
						\frac{1}{2}	FY 1999	FY 2000	00	FY 2001
-						21,	21,106	20,849	49	12,834
						43,	43,746	37,022	22	20,616
(U) Link-16 Data Link	Cink					4,	4,800		0	0
(U) APG-63(V)1						. ••	581		0	0
(U) Joint Helmet N	Joint Helmet Mounted Cueing System					5,	5,343	1,875	75	0
(U) DMS (Parts Obsolescence)	bsolescence)					4,	4,695	7,092	92	6,000
(U) Smart Weapons	SI					3,	3,507	15,810	01	20,030
(U) Advance Displ	Advance Display Core Processor (ADCP)						0	18,405)5	0
(U) Combat ID						6,	6,070	4,469	69	1,780
(U) ALQ-135 Band 1.5	d 1.5					7,	7,540	3,944	44	0
(U) Air Data Processor	SSOr					2,	2,846	1,510	01	0
(U) TISS Computer Upgrade	ır Upgrade						740	15	196	0
(U) ECCM							0	15,000	00	0
(U) Total						100,974	974	126,172	72	61,260
(U) B. Budget Acc	B. Budget Acquisition History and Planning Inform	ing Informatio	nation (S in Thousands)	ds)						
(U) Performing Organizations										
Contractor or	Contract									
<u>Government</u>	Method/1 ype		Fertorming	Project		,	•	,		
Pertorming	or Funding	<u>Ubligation</u>	Activity	Office	lotal Prior	Budget	Budget	Budget	Budget to	Total
Activity	Vehicle	<u>Date</u>	EAC	EAC	to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
De.W (220 Eac)	Froduct Development Organizations	Son 04	0633	0029	063 3	c	c	•	c	0027
GE (-129 Eng)		3cp 34 Feb 95	0,520	0,520	0,320	0 0	>			0,520
Roeing (GFE/GFP)		Dec 93	1 975	1 975	1 975	o	o c	· c	0	1 975
OFP Suite 4/5/	velopment	May 98	339,808	339,808	104,551	43.746	37.022	20.616	Continuing	TBD
Boeing APG63	CPFF	Feb 94	778	778	778	0	0	0	0,0	778
(Feasibility Study)	dy)									
(Risk Reduction)	n) CPFF	Feb 94	9,892	9,892	6,892	0	0	0	0	9,892
Project 670131			Pag	Page 6 of 7 Pages	es			Exhik	Exhibit R-3 (PE 0207134F)	07134F)

BUDGET ACTIVITY O7 - Operational System Development (U) Performing Organizations Continued: Product Development Organizations (EMD) CPAF Sep Boeing (JHMCS A-D) CPAF Ma						_	rebinaly 2000	3
Performing Organizations Continued: Product Development Organizations (EMD) CPAF Boeing (JHMCS A-D) CPAF PACS Upgrade CPAF		PE NUMBER AI 0207134F		4D TITLE F-15E SQUADRONS	NS		9	РРОЈЕСТ 670131
t Development Organizations CPAF (JHMCS A-D) CPAF CPAF								
CPAF (JHMCS A-D) CPAF Upgrade CPAF		,		;	,	,	,	
CPAF CPAF	Sep 94 223,033	223,033	222,452	581	0	0	0	223,033
CPAF	11,358	11,358	4,140	5,343	1,875	0	0	11,358
	May 95 28,343	28,343	28,343	0	0	0	0	28,343
AS) MIPR/PRs	Sep 94 81,348	81,348	24,311	4,695	7,092	6,000	Continuing	TBD
leapons Integration CPAF	Feb 99 51,607	51,607	0	3,507	15,810	20,030	Continuing	TBD
CPAF	Jan 99 4,356	4,356	0	2,846	1,510	0	0	4,356
CPAF	Jan 00 108,522	108,522	0	0	18,405	0	Continuing	TBD
NGA (ALQ-135 Band 1.5) FFP May	May 97 39,384	39,384	27,900	7,540	3,944	0	0	39,384
Link-16 Data Link CPAF Apr	Apr 98 19,400	19,400	14,600	4,800	0	0	0	19,400
Combat ID CPAF May	May 98 14,109	14,109	1,790	6,070	4,469	1,780	Continuing	TBD
TISS Replacement CPFF Aug	Aug 97 4,896	4,896	3,560	740	196	0	400	4,896
Boeing/Raytheon ECCM CPAF Jan	Jan 00 15,000	15,000	0	0	15,000	0	0	15,000
Support and Management Organizations								
(Msn Spt) Misc.			16,708	0	0	0	0	16,708
Test and Evaluation Organizations								
Boeing (Flt Test) FFP Oct	Oct 96 123,434	123,434	51,815	000'6	11,140	7,479	Continuing	TBD
PO	Oct 96 91,048	91,048	41,562	12,106	7,590	4,017	Continuing	TBD
Eglin (Flt Test) PO Oct	Oct 96 21,667	21,667	12,210	0	2,119	1,338	Continuing	TBD
			Total Prior	Budget	Budget	Budget	Budget to	Total
Subtotals			to FY 1999	FY 1999	FY 2000	EY 2001	Complete	Program
Subtotal Product Development			457,942	79,868	105,323	48,426	TBD	TBD
Subtotal Support and Management			16,708	0	0	0	0	16,708
Subtotal Test and Evaluation			105,587	21,106	20,849	12,834	TBD	TBD
Total Project			580,237	100,974	126,172	61,260	TBD	TBD
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Project 670131	H	Page 7 of 7 Pages	es			Exhib	Exhibit R-3 (PE 0207134F)	07134F)

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	RDT	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	JSTIFIC	ATION :	SHEET	(R-2 Ex	chibit)		DATE	Februa	February 2000	
BUD 07	вирсет астіміту 07 - Operational Sy	вирсет астипту 07 - Operational System Development			PE NUMBER AND TITLE 0207136F Mann	R AND TITLE	PE NUMBER AND TITLE 0207136F Manned Destructive Suppression	uctive Su	ıppressic	uo	PROJECT 674595	
	COST (\$	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost	
674595		F-16 HARM Targeting System (HTS)	1,663	3,363	14,670	22,113	23,789	14,559	9,597	Continuing	TBD	_
	Quantity of RDT&E Articles	E Articles	0	0	0	0	0	0	0	0		0
Đ	A. Mission Description The overall Manned Des Defenses (SEAD) capab is the only currently prog continues HTS preplann begin to develop HTS er represent the Air Force's targeting of the Joint Sta defense system elements	itructive Suppression (MDS) ility. The program provides grammed reactive SEAD caped product improvement (P3) rigineering changes needed to near-term solution (until rep ndoff Weapon (JSOW) and p. R7 derived coordinates of:	program fun F-16 Block 5 ability and el permit the F permit the F laced by JSF locentially tal	ds the develon/52 aircraft nables target the HTS P31 -16 to carry) for Destruct reging of others will be availthe availthe	opment, pro t with the at ing the HAJ program be both an HT ction of Ene her precisio	curement, a sility to emp the missile gan develop. S pod and a my Air Deff n guided mu Joint Force	program funds the development, procurement, and sustainment of the Air Force's lethal Suppression of Enem F-16 Block 50/52 aircraft with the ability to employ the AN/ASQ-213 HARM Targeting System (HTS). F-1 ability and enables targeting the HARM missile in the most lethal 'range known' mode. This RDT&E effort '). In FY00 the HTS P3I program began development of the HTS Revision 7 (R7) upgrade. In FY01 effort v permit the F-16 to carry both an HTS pod and an advanced targeting pod (TGP). These HTS improvements laced by JSF) for Destruction of Enemy Air Defenses (DEAD) mission. R7/alternate/dual carriage will allow oftentially targeting of other precision guided munitions (PGMs) needed to destroy fixed and mobile enemy a threat emitters will be available to all Joint Forces via Link-16.	ant of the Ai ASQ-213 H. ethal 'range HTS Revisi argeting pox O) mission. Ms) needed 6.	ir Force's letl ARM Target known' mod on 7 (R7) up 1 (TGP). Th R7/alternate to destroy fin	hal Suppress ing System (ie. This RDT grade. In F ese HTS imp s/dual carriag xed and mob	program funds the development, procurement, and sustainment of the Air Force's lethal Suppression of Enemy Air F-16 Block 50/52 aircraft with the ability to employ the AN/ASQ-213 HARM Targeting System (HTS). F-16 HTS ability and enables targeting the HARM missile in the most lethal 'range known' mode. This RDT&E effort (). In FY00 the HTS P31 program began development of the HTS Revision 7 (R7) upgrade. In FY01 effort will permit the F-16 to carry both an HTS pod and an advanced targeting pod (TGP). These HTS improvements laced by JSF) for Destruction of Enemy Air Defenses (DEAD) mission. R7/alternate/dual carriage will allow obtentially targeting of other precision guided munitions (PGMs) needed to destroy fixed and mobile enemy air threat emitters will be available to all Joint Forces via Link-16.	
99999	\$513 Cor \$1,117 Cor \$3,3 Cor \$1,663 Tot	sands) Complete HTS R6 development (includes Air Force Mission Support System (AFMSS) modifications) Continued HTS Test and Evaluation Continued Mission Support Total	nt (includes nation	Air Force M	lission Supp	ort System ((AFMSS) mc	odifications)				
9999	FY 2000 (\$ in Thousands) \$2,661 Init \$702 Cor \$3,363 Tot	sands) Initiate HTS R7 Geolocation Upgrade Program Definition study & Risk Reduction (PDRR) Continue Mission Support Total	lpgrade Prog	ram Definiti	ion study &	Risk Reduc	tion (PDRR)					
55555	FY 2001 (\$ in Thousands) \$1,300 Cor \$11,520 Cor \$150 Init	sands) Complete HTS R7 Geolocation Upgrade Program Definition study & Risk Reduction (PDRR) Continue R7 Geolocation Development (Includes HTS/TGP Dual Carriage) Initiate R7 Upgrade Test and Evaluation Continue Mission Support	ı Upgrade Pı slopment (In valuation	ogram Defii cludes HTS/	nition study TGP Dual (& Risk Red Zarriage)	luction (PDR	(K)				
ır.	Project 674595			Page	Page 1 of 5 Pages				Ш	xhibit R-2 (Exhibit R-2 (PE 0207136F)	
					1075							

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SHEET (R-2 Exhibi	t)	DATE February 2000	y 2000
900 07	вирсет Астіvіту 07 - Operational System Development	PE NUMBER AND TITLE 0207136F Manned Destructive Suppression	structive Supp	oression	PROJECT 674595
9	A. Mission Description Continued				
99	FY 2001 (\$ in Thousands) Continued \$14,670 Total				
9	B. Budget Activity Justification This PE is in Budget Activity 7 - Operational System Development because it supports preplanned product improvements and upgrade development of F-16 HTS, a fielded system.	it supports preplanned product i	nprovements and upរូ	grade development of	F-16 HTS, a
3	C. Program Change Summary (\$ in Thousands)				
		EY 1999	EX 2000	FY 2001	Total Cost
9	Previous President's Budget (FY 2000 PBR)	2,392	5,402	1,472	67,370
<u>e</u>	Appropriated Value	2,443	3,402		
9	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	4			
	b. Small Business Innovative Research	5-			
	c. Omnibus or Other Above Threshold Reprogram		-18		
	d. Below Threshold Reprogram	-715			
	e. Rescissions	-16	-21		
	I. Ouner				
<u>33</u>	Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR	1,663	3,363	13,198 14,670	TBD
<u> </u>	Significant Program Changes: Funding was added in FY 2001 (\$13.2M) and in out-years to continue R7 upgrade development. R7 effort will focus on developing a HTS precision geolocation targeting capability and moving HTS pod location to allow carriage of advanced targeting pods on the F-16 Block 50/52 aircraft along with HTS. R7 will provide coordinates of threat emitters to the Joint Forces, enabling destruction of enemy air defense elements using JSOW or other precision guided munitions. Completion of R6 upgrade development and intital deployment has slipped into FY2000 due to software problems discovered during testing.	ars to continue R7 upgrade development. R7 effort will focus on developing a HTS precision geolocation low carriage of advanced targeting pods on the F-16 Block 50/52 aircraft along with HTS. R7 will provide ng destruction of enemy air defense elements using JSOW or other precision guided munitions. Completio pped into FY2000 due to software problems discovered during testing.	vill focus on developi 3lock 50/52 aircraft a SOW or other precisi 2d during testing.	ing a HTS precision ge along with HTS. R7 w ion guided munitions.	colocation rill provide Completion of
	Project 674595 Page	Page 2 of 5 Pages		Exhibit R-2 (PE 0207136F)	PE 0207136F)
		0			,

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUSTIF	CATION	SHEET (R-2 Exhi	bit)	ď	DATE February 2000	, 2000
BUD(07	вирдет астилту 07 - Operational System Development			PE NUMBER AND TITLE 0207136F Mann		ю т⊓∟Е Manned Destructive Suppression	re Suppre	ssion	PROJECT 674595
(2)	D. Other Program Funding Summary (\$ in Thousands) EY 1999 EY 2000 Actual Estimate	Chousands) EX 2000 Estimate	FY 2001. Estimate	FY 2002 Estimate	EY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
222	AF RDT&E Other APPN HTS Aircraft Procurement 1,723 (BP11)AF PE 0207136F HTS Aircraft Procurement 12,180		13,653		3,547	10,447	9,878	Continuing	
<u> </u>	E. Acquisition Strategy The HTS program objective is to develop precision geolocation capability that significantly improves speed and accuracy of emitter targeting solutions on F-16 Block 50/52 aircraft. Precision geolocation capability will permit targeting of PGMs such as JSOW, in addition to the HARM missile, against mobile and fixed sites. The objective will be accomplished through study, risk reduction, and EMD efforts that significantly upgrade and increase the F-16's and Joint Forces real-time Destruction of Enemy Air Defenses (DEAD) capabilities.	sion geolocatio will permit tar isk reduction, a	n capability tha geting of PGM. ınd EMD effort	it significantly s such as JSON s that significa	improves spee V, in addition 1 ntly upgrade a	d and accurac; to the HARM I	y of emitter tai missile, again: e F-16's and J.	rgeting solutions o st mobile and fixed oint Forces real-tin	n F-16 Block l sites. The ne Destruction of
3	F. Schedule Profile		-	FY 1999	4	EX 2000	,000 3	EX 1	FY 2001
55555555	Complete F-16 HTS R6 Upgrade Development Continue F-16 HTS R7 Development Award Contract for R7 PDRR New Buy Lot 2 Contract Award New Buy Lot 2 Pod Deliveries (16 Pods) New Buy Lot 3 Contract Award New Buy Lot 3 Contract Award New Buy Lot 3 Pod Deliveries (13 Pods) R6 Fielding * = Completed Event X = Planned Event		*		-	· *		× × ×	
<u>σ</u> .	Project 674595		Pag	Page 3 of 5 Pages				Exhibit R-2 (PE 0207136F)	E 0207136F)

	RDT&E PROGRAM ELEMENT	RAM ELE		/PROJECT COST BREAKDOWN (R-3)	OST BF	REAKDO!	WN (R-3)		DATE F.P.	February 2000	9
BUD	BUDGET ACTIVITY				PE NUMBI	PE NUMBER AND TITLE					PROJECT
6	 Operational System Development 	<u>Jevelopme</u>	į		0207136F		d Destruc	Manned Destructive Suppression	ression		674595
9	A. Project Cost Breakdown (\$ in Thousands)	(\$ in Thousand	<u>(sp</u>				FV 1000	000	FV 2000	ç	FV 2001
£	HTS R7Program Definition study and Risk Reduction (P	udy and Risk R	(eduction (PDRR)	R)					2,661	21	1,300
<u> </u>	Test & Evaluation HTS R6 (Includes AFMSS)		ai Caillage)				1,	1,117			150
333	Mission Support Total						, ,,1	33 1,663	702 3,363	3 5	1,700 14,670
9	B. Budget Acquisition History and Planning Information (\$ in Thousands)	y and Plannin	g Information	(S in Thousand	(জ						
9	Performing Organizations; Contractor or	Contract									
	Government Performing	Method/Type or Funding	Award or Obligation	Performing Activity	Project Office	Total Prior	Budget	Budget	Budget	Budget to	Total
	Activity Vehicl Product Develonment Organizations	Vehicle	Date	EAC	EAC	to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
	Raytheon Systems Co.	SS/Various	Varions	6,808	808'9	6,808	0	2,661	12,820	Continuing	TBD
	Raytheon Systems Co.	SS/CPAF	Feb 96	30,931	30,931	30,931	400	0	0	0	31,331
	AFMSS I ockheed/Ft Worth	SS/CPIF SS/FFP	Various Various	2 400	2 400	1,772	113	0 0	0 0	0 0	1,885
	Support and Management Organizations	anizations	can can be a	1 , 100 to 100	7,	2,100	>		>		7,100
	Prog. Mgt. and Mission	Various	Various			3,950	33	702	1,700	Continuing	TBD
	Support Test and Evaluation Organizations	ions									
	Eglin	PO	Various			1,867	308	0	0	Continuing	TBD
	Edwards	PO	Various			3,585	608	0	150	Continuing	TBD
	Light Defender		Various			922	0	0	0	0	922
<u></u>	Project 674595		_	Pag	Page 4 of 5 Pages	es			Exhibi	Exhibit R-3 (PE 0207136F)	07136F)

RDT&E PROGRAM ELEMENT/PROJECT	/PROJECT COST BREAKDOWN (R-3)	VN (R-3)		DATE Fe	February 2000	
вирает астімту 07 - Operational System Development	PE NUMBER AND TITLE 0207136F Manned Destructive Suppression	d Destruct	ive Supp	ression	id 9	РРОЈЕСТ 674595
(U) Government Furnished Property: Contract Method/Type Award or Item or Funding Obligation Delivery Description Vehicle Date Product Development Property Not Applicable Support and Management Property Not Applicable Test and Evaluation Property Not Applicable To Applicable Test and Evaluation Property Not Applicable	Total Prior to FY 1999 Total Prior	Budget FY 1999	Budget FY 2000	Budget EY 2001	Budget to Complete	Total Program Total
Subtotals Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	10 FY 1999 41,911 3,950 6,374 52,235	FY 1999 513 33 1,117 1,663	2,661 2,661 702 0 3,363	EX 2001 12,820 1,700 150 14,670	Complete TBD TBD TBD TBD TBD	TBD TBD TBD TBD
Project 674595	Page 5 of 5 Pages			Exhibi	Exhibit R-3 (PE 0207136F)	7136F)
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RDT&E BUDGET ITEM JU	JUSTIFIC	ATION	STIFICATION SHEET (R-2 Exhibit)	(R-2 Ex	thibit)		DATE	Februa	February 2000
BUDGET ACTIVITY 07 - Operational System Development			PE NUMBER 0207141	PE NUMBER AND TITLE 0207141F F-117	PE NUMBER AND TITLE 0207141F F-117A Squadron	ron			PROJECT 673956
COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
673956 F-117A Stealth Fighter	10,305	11,659	3,912	2,292	3,530	10,063	7,145	7,145 Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

A. Mission Description

States Air Force to hold even the most highly defended targets at risk. The program completed production in Jul 1990 with the delivery of the final F-117 (number 59). The F-117 is the world's first operational low-observable (LO) combat aircraft. Its combination of stealth and precision weapons delivery capability allows the United The single operational F-117 unit is the 49th Fighter Wing stationed at Holloman AFB, NM. The program is now primarily engaged in sustainment activities for the F-117 which is projected to remain in service through at least 2018. This program provides funds to develop improved systems to enhance combat capability while maintaining a safe, reliable and supportable aircraft.

and Wind Corrected Munitions Dispenser (WCMD) capability, however, the current limited JDAM program will be pursued as a result of increased contractor estimates modification, which is expected to complete development in FY00, is an essential prerequisite for integration of advanced weapons on the F-117. Development efforts Smart Weapons Integration program and will begin development in FY01. Block Cycle 3 (BC3) will also begin Pre-EMD activities in FY00. BC3 Mid Life Upgrade continue for Smart Weapons Integration, providing limited Joint Direct Attack Munition (JDAM) capability on the F-117. The original program plan included JDAM This project provides research and development for multiple modifications to the F-117 weapons system. The MIL-STD-1760 Stores Management Processor (SMP) for the full 2-weapon capability. The addition of a limited integrated Enhanced GBU-27 capability with PilotVehicle Interface (PVI) will be incorporated into the replaces obsolete systems, establishes new vendors and improves reliability and maintainability to keep the F-117 operational through its service life.

FY 1999 (\$ in Thousands) 9

9	\$6,565	Continued development work on Stores Management Processor (SMP)
9	\$3,740	Limited Enhanced GBU-27 development per Combat Mission Needs Statement
9	\$10,305	Total

FY 2000 (\$ in Thousands) 99

- Complete development work on SMP \$2,212
- Continue development work on Smart Weapons Integration (JDAM Risk Reduction) \$2,447
- Begin development work on Block Cycle 3 (Pre-EMD/PDRR) \$7,000
 - \$11,659

Exhibit R-2 (PE 0207141F)	
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Project 673956	

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SHEET (R-2 Exhibi	it)	DATE February 2000	000
BUDK 07 -	вирсет астилту 07 - Operational System Development	PE NUMBER AND TITLE 0207141F F-117A Squadron	uadron		РРОЈЕСТ 673956
(E)	A. Mission Description Continued				
999	FY 2001 (\$ in Thousands) \$3,912 S3,912 Total	ration (EMD for limited JDAM	and EGBU-27)		
9	B. Budget Activity Justification This program is in budget activity 7, Operational System Development, because all aircraft have been delivered and the program is in its deployment phase.	use all aircraft have been delive	red and the program	is in its deployment phase.	
3	C. Program Change Summary (\$ in Thousands)				
		FY 1999	FY 2000	FY 2001	Total Cost
9	Previous President's Budget (FY 2000 PBR)	5,097	4,807	2,847	TBD
<u> </u>	Appropriated value	7,14/	11,80/		
9_	Adjustments to Appropriated Value	35	9		
	a. Congressional/Ceneral reductions b. Small Business Innovative Research	-55	01-		
	c. Omnibus or Other Above Threshold Reprogram	3,740	4		
	d. Below Threshold Reprogram	1,739			
	e. Rescissions	-73	-74		
	f. Other				
99	Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR Note: \$-61 for CANX Bill included in the FY99 Below Threshold Reprogram total	10,305 am total	11,659	1,065 3,912	TBD
9	Significant Program Changes:				
	FY99: The F-117 was directed through a Combat Mission Statement (CMNS) to provide an adverse weather delivery of a precision weapon, specifically the Enhanced GBU-27 (EGBU-27). \$1.8M was added to the Stores Management Processor (SMP) effort for software modification, integrating a minimum 1760 interface, which will provide power and GPS data to the EGBU-27; \$3.74M in FY99 Supplemental funds for CMNS limited EGBU-27 integration development.	S) to provide an adverse weather (SMP) effort for software moral funds for CMNS limited EGF	r delivery of a preci dification, integratin 3U-27 integration de	sion weapon, specifically the g a minimum 1760 interface evelopment.	e Enhanced e, which will
	FY00: \$7M was added to fund Block Cycle 3 Pre-EMD FY01: \$1.1M was added to Smart Weapons Integration development effort to	development effort to support JDAM testing through the use of Environmental Guided Test Vehicles.	h the use of Environ	mental Guided Test Vehicle	80
۵	Project 673956 Page	Page 2 of 5 Pages		Exhibit R-2 (PE 0207141F)	207141F)

	RDT&E BUDGET ITEM JU	GET ITE	M JUSTIF	CATION	STIFICATION SHEET (R-2 Exhibit)	R-2 Exhi	lbit)	Δ	DATE February 2000	y 2000
97 04	вирсет астилту 07 - Operational System Development	velopmen	٠		PE NUMBER AND TITLE 0207141F F-117	I ∢	Squadron			PROJECT 673956
9	D. Other Program Funding Summary (\$ in Thousands) FY 1999 FY 2000 Actual Estimate	mmary (\$ in 7 FY 1999 Actual	Thousands) EY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
99					1					
9	Aircraft Procurement (BA-5), Appn 3010/BP1100, AF F117A Squadrons. PE 27141F	28,488	37,201	32,005	27,397	21,215	8,255	759	Continuing	TBD
<u>(5)</u>				2,377						2,377
<u> </u>	E. Acquisition Strategy RDT&E funds are executed to develop improved capability, reliability, maintenance and safety modification development efforts. Operational Flight Program (OFP) software is continuously updated as needed to support mod efforts to complement modification development efforts. The contracting approach varies by individual effort and involves Firm Fixed Price (FFP), Cost Plus Fixed Fee (CPFF), and Cost Plus Award Fee (CPAF) contract types.	evelop improv as needed to s rice (FFP), Co	ed capability, r upport mod eff st Plus Fixed F	eliability, mair orts to comple e (CPFF), and	ntenance and sa ment modifical Cost Plus Aw	ifety modificat ion developmard Fee (CPAI	tion developme ent efforts. Th	nt efforts. Ope contracting ss.	oerational Flight Pr approach varies by	ogram (OFP) individual
3	F. Schedule Profile				FV 1000		EV 2000	000	FV	EV 2001
				1	2 3	4	1 2	3 4	1 ~	3 4
9	Stores Management Processor (SMP) (RDT&E Started Finishes Mar 00)	iMP) (RDT&E	Started Jul 96,				×			
9	Single Configuration Fleet (SCF) (RDT&E Started Apr Jan 99)) (RDT&E Sta	rted Apr 96, Fi	96, Finishes	*					
9	Smart Weapons IntegrationLimited JDAM (PDRR Starts Sep 98, Fin Sep 00)	nited JDAM (P	DRR Starts Se	p 98, Fin				×		
9		DAM & Full F	3GBU-27 (EM	D Strt					×	
9		EV 01)						×		×
	(NO 18CE States I 1 00, I misues I	(101)								
	Project 673956			Pag	Page 3 of 5 Pages				Exhibit R-2 (PE 0207141F)	E 0207141F)

	RDT&E PROGRAM ELEMENT	AM ELE		/PROJECT CO	OST BR	COST BREAKDOWN (R-3)	VN (R-3)		DATE Fe	February 2000	00
80E	вирсет астилту 07 - Operational System Development	velopmer	nt		PE NUMBER AN 0207141F	PE NUMBER AND TITLE 0207141F F-117A	чо тить F-117A Squadron	_		9	РРОЈЕСТ 673956
(1)	A. Project Cost Breakdown (\$ in Thousands)	in Thousand	(জ				1 232	90	006 781		1000 XXT
56	Development work on SMP (MIL-STD-1760)	IL-STD-1760					6,565 3,740	6,565	2,212	21 63	F Y 2001
<u> </u>	,	ins imogrado	=				ĵ	2	2,447	۲ (3,912
33	-						10,305	305	11,659		3,912
3	B. Budget Acquisition History and Planning Information (\$ in Thousands)	and Planning	g Information	(\$ in Thousand	ଜ						
9	Performing Organizations: Contractor or	Contract									
		Method/Type or Funding	Award or Obligation	Performing Activity	Project Office	Total Prior	Budget	Budget	Budget	Budget to	Total
	Activity	Vehicle	Date	EAC	EAC	to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
	Product Development Organizations SMP (MIL-STD-1760	Suoi									
	modification)										
	ınk	CPAF	36 Inf	19,927	19,927	11,150	6,565	2,212	0	0	19,927
	Works, Palmdale CA						c	c	c	c	•
	Single Configuration Fleet (RAM Recoat Modification)						>	>	0	>	0
_	Wright Laboratory, Signature AF 616	F 616	Apr 96	329	329	329	0	0	0	0	329
	notogy ornice lia Labs, Albuquerque	MIPR	Jan 98	4,751	4,751	4,751	0	0	0	0	4,751
				9	1	1	,	((•	1
	Lockheed Martin Skunk Tö Works, Palmdale CA	T&M	Apr 98	5,590	5,590	5,590	0	0	0	0	5,590
	mical	CPFF	Sep 97	2,139	2,139	2,139	0	0	0	0	2,139
	Lockheed Martin Skunk Works, Palmdale CA										
	Project 673956			Page	Page 4 of 5 Pages	S	:	Ė	Exhibi	Exhibit R-3 (PE 0207141F)	7141F)

<u> </u>	RDT&E PROGRAM ELEMENT	AM EL		/PROJECT COST BREAKDOWN (R-3)	OST BF	₹EAKDO\	WN (R-3)		DATE Fe	February 2000	2
BUE 0	вирсет астилту 07 - Operational System Development	evelopmo	ent		PE NUMBER AN 0207141F	PE NUMBER AND TITLE 0207141F F-117A	мр тите F-117A Squadron	u		id '9	PROJECT 673956
(E)	Performing Organizations Continued: Product Development Organizations	ntinued: ions									
	Smart Wpn Integration Lockheed Martin Skunk Works, Palmdale CA	CPAF	Sep 98	ТВD	TBD	350	0	2,447	3,912	Continuing	TBD
	BU-27 ink	CPAF	Sep 99	3,740	3,740	0	3,740	0	0	0	3,740
	Block Cycle 3 Pre-EMD CPFF Lockheed Martin Skunk Works, Palmdale CA Support and Management Organizations	CPFF anizations	Apr 00	7,000	7,000	0	0	7,000	0	0	7,000
	Test and Evaluation Organizations	suc									
	Subtotals Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation	ent				Total Prior to FY 1999 24,309	Budget FY 1999 10,305	Budget FY 2000 11,659	Budget FY 2001 3,912	Budget to Complete TBD	Total Program TBD
	Total Project					24,309	10,305	11,659	3,912	TBD	TBD
	Project 673956			Pag	Page 5 of 5 Pages	çes.			Exhibi	Exhibit R-3 (PE 0207141F)	7141F)

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	RDT&E BUDGET ITEM JU	JSTIFIC	ATION	STIFICATION SHEET (R-2 Exhibit)	(R-2 Ex	hibit)		DATE	Februa	February 2000
BUDGET 07 - O	вирсет аститту 07 - Operational System Development			PE NUMBER 0207161	PE NUMBER AND TITLE 0207161F Tactic	PE NUMBER AND TITLE 0207161F Tactical AIM Missiles	lissiles			PROJECT 674132
	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
674132	AIM-9 Product Improvement	49,348	40,513	21,706	3,510	4,847	16,451	5,836	0	241,429
	Quantity of RDT&E Articles	1	5	9	11	0	0	0	0	23
Ė	The state of the s] -	,		.,

Note: The RDT&E articles are deliverables under the Engineering and Manufacturing Development contract and are not separately priced. Quantities are delivered in the indicated Fiscal Years. Deliveries support restructured program.

(U) A. Mission Description

(Sidewinder) short range air-to-air missile modification program provides a launch and leave, air combat munition that uses passive infrared (IR) energy for acquisition and tracking of enemy aircraft and complements the Advanced Medium Range Air-to-Air Missile. Air superiority in the short range air-to-air missile arena is essential and includes first shot, first kill opportunity against an enemy employing IR countermeasures. The AIM-9X employs several components common with the AIM-9M. Anti-Tamper features are being incorporated to protect improvements inherent in AIM-9X design. AIM-9X is an Acquisition Category ID (ACAT ID) joint-service The AIM-9X is a long-term evolution of the AIM-9, a fielded system, qualifying this as a research category operational systems development. The AIM-9X program with Navy lead.

currently fielded AIM-9M short range missile. USAF and USN warfighters have jointly emphasized the need to aggressively field the AIM-9X to counter the already Status: The program is on track to meet LRIP entry criteria in Aug 00. As of Jan 00, the AIM-9X test program has demonstrated capabilities beyond those of the fielded and superior threat air-to-air systems.

(U) <u>FY 1999 (\$ in Thousands)</u>

ulcie	nterface support to the Engineering and Manufacturing Development (EMD) contractor, incorporate results of wind		t IIB (DT-IIB), and start DT-IIC (Guided Launches). Operational Test IIA (OT-IIA) (Guided Launches), and
Continued the maintacturing development contract and accept delivery of one test article	Continued providing aircraft interface support to the Engineering and Manufacturi	tunnel test for the F-15 and F-18	Continued Developmental Test IIB (DT-IIB), and start DT-IIC (Guided Launches)
451,503	(U) \$6,602		(U) \$7,354
9	9		9

ities	working capital funded personnel, supplies, and	ď.
Field engineering support for government flight test activ	Provided program office management support to include	Provided contractor services support to the program office
\$831	\$2,518	\$538
5	5	5

Total

\$49,348

conduct insensitive munitions tests at multiple test sites

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Project 674132

	RDT&	RDT&E BUDGET ITEM JUSTIFICATION	STIFICATION SHEET (R-2 Exhibit)	DATE February 2000
8UDK 07 -	вирбет Астімту 07 - Operational Sys	вирсет Астилу 07 - Operational System Development	PE NUMBER AND TITLE 0207161F Tactical AIM Missiles	PROJECT 674132
9	A. Mission Description Continued	on Continued		
99	FY 2000 (\$ in Thousands) \$19,635 Cor	nds) Continue the manufacturing development contract to to a Defense Acquisition Board Low Rate Initial Prod	Continue the manufacturing development contract to include Technical Readiness Review (TRR), Production Readiness Review (PRR) leading to a Defense Acquisition Board Low Rate Initial Production (LRIP) decision in 4th Qtr FY00 with production option award in FY01, and	keadiness Review (PRR) leading option award in FY01, and
99	\$1,300 \$14,343	delivery of five test articles. Continue flight testing (I Continue providing aircraft interface data to the EMD Continue providing government flight test support of	delivery of five test articles. Continue flight testing (DT) and OT flight test support for Operational Assessment. Continue providing aircraft interface data to the EMD contractor in support of OT-IIA and DT-IIC and complete OT-IIA Continue providing government flight test support of ongoing activities defined in DT-IIB and Captive Carry Reliability Flight Program at	ıt. te OT-IIA teliability Flight Program at
9999	\$1,699 \$2,814 \$722 \$40,513	Field engineering support for government flight test activities Provide program office management support to include worki Provide for consulting services, technical engineering, and ma Total	Field engineering support for government flight test activities Provide program office management support to include working capital funded personnel, supplies, and travel Provide for consulting services, technical engineering, and management support Total	
99	FY 2001 (\$ in Thousands) \$10,095 Cor	nds) Continue the manufacturing development contract to articles	lds) Continue the manufacturing development contract to include completion of DT-IIB/C and start of DT-IID Launches and delivery of six test articles	nches and delivery of six test
555555	\$1,181 \$8,183 \$602 \$1,422 \$223 \$21,706	Continue providing aircraft interface support to the EMD contractor Continue providing government flight test support of activities defin Field engineering support for government flight test activities Provide program office management support to include working cap Provide for consulting services, technical engineering, and managem Total	Continue providing aircraft interface support to the EMD contractor Continue providing aircraft interface support of activities defined as DT-IID and DT Assist (with operational testers) at multiple test sites. Field engineering support for government flight test activities Provide program office management support to include working capital funded personnel, supplies, and travel Provide for consulting services, technical engineering, and management support Total	nal testers) at multiple test sites
(5)	B. Budget Activity Justification This program is in budget activity 7 - 00 the AIM-9 series of air-to-air missiles.	istification iget activity 7 - Operational System Development, sind r-to-air missiles.	B. Budget Activity Justification This program is in budget activity 7 - Operational System Development, since the AIM-9X is a modification to the already fielded AIM-9M and a long term evolution of the AIM-9 series of air-to-air missiles.	M-9M and a long term evolution of
<u>a</u>	Project 674132	Pag	Page 2 of 7 Pages	Exhibit R-2 (PE 0207161F)
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	RDT&E BUDGET ITEM JUSTIFICATION	STIFICATION SHEET (R-2 Exhibit)	t)	DATE Febru a	February 2000
BUD(07 -	вирсет астилту 07 - Operational System Development	PE NUMBER AND TITLE 0207161F Tactical AIM Missiles	M Missiles		PROJECT 674132
(3)	C. Program Change Summary (\$ in Thousands)	1000 TX	FY 2000	FV 2001	Total Cost
3	Previous President's Budget (FY 2000 PBR)	52,604	41,007	17,399	240,212
93	Appropriated Value	52,966	41,007		
9	Adjustificitis to Appropriated value a. Congressional/General Reductions	-212	-15		
	b. Small Business Innovative Research	-1,599	, c		
	c. Omnibus or Other Above 1 meshold Keprogram d. Below Threshold Reprogram	-1.381	-773		
	e. Rescissions	-426	-256		
99	T. Other Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR	49,348	40,513	4,307 21,706	241,429
9	Significant Program Changes: General: The AIM-9X program has developed two restructuring efforts since the submission of the FY00 PB. The Jul 99 restructure resulted from the eight month delay in the flight test program and moved full rate production (MS III) from FY02 to FY03, changed the original FY02 full rate procurement (FRP) into a third LRIP, and adjusted completion of the OT-IIB period while maintaining a FY02 Required Assets Availability (RAA) date. The second restructure was due to the Appropriations Conference zeroing of FY00 procurement funding. This moves the LRIP I contract award into FY 01, slips FRP award into FY04 and the RAA date slips into FY03.	the submission of the FY00 PE FY02 to FY03, changed the oriured Assets Availability (RAAses the LRIP 1 contract award in	3. The Jul 99 restri iginal FY02 full ra t) date. The secon nto FY 01, slips FF	ucture resulted from th te procurement (FRP) d restructure was due t tP award into FY04 an	te eight month into a third LRIP, to the nd the RAA date
	Funding: The FY01 increase of \$4,307 is needed to support flight test activities. The delayed start of the flight test program moved test activities programmed in FY00 into FY01. Increased contractor and government support is required under the restructured program. The funding was available as a result of the program restructure, which reduced the number of missiles procured in FY01 and adjusted the procurement and RDT&E funding. Out year RDT&E funding will include an initiative to design launcher modifications to relocate older AIM-9M fin retention clips to accommodate AIM-9X (fin clips not needed and interfere with separation in high dynamic engagements) as well as P3I requirements.	ies. The delayed start of the fli, restructured program. The flu curement and RDT&E funding accommodate AIM-9X (fin cli	ght test program moding was availabl Out year RDT&! ips not needed and	toved test activities pro e as a result of the pro E funding will include interfere with separati	ogrammed in FY00 gram restructure, an initiative to ion in high dynamic
	Schedule: The program is on track to meet LRIP entry criteria in Aug 00. It is important to note that the DAB will be held in 4QFY00 to ensure we are able to award the LRIP I production option in IQFY01. The flight test program has completed three guided firings demonstrating improved capabilities over the fielded AIM-9M.	criteria in Aug 00. It is important to note that the DAB will be held in 4QFY00 to ensure we are able to award st program has completed three guided firings demonstrating improved capabilities over the fielded AIM-9M.	AB will be held in ostrating improved	4QFY00 to ensure we capabilities over the fi	are able to award ielded AIM-9M.
Ω.	Project 674132	Page 3 of 7 Pages		Exhibit R-2	Exhibit R-2 (PE 0207161F)

	RDT&E BUDGET ITEM JU		CATION	STIFICATION SHEET (R-2 Exhibit)	R-2 Exhi	bit)		DATE February 2000	y 2000
BUE 07	вирсет аститу 07 - Operational System Development	it.		PE NUMBER AND TITLE 0207161F Taction	AND TITLE Tactical	PE NUMBER AND TITLE 0207161F Tactical AIM Missiles	les		PROJECT 674132
(D)	D. Other Program Funding Summary (\$ in Thousands) EY 1999 EY 2000 Actual Estimate	Thousands) EX 2000 Estimate	FY 2001 Estimate	EY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
999	AF RDT&E Other APPN Missile Procurement, P-1 line item Tactical AIM Missile Modification	0	25,510	46,079	65,409	83,014	65,781	846,127	1,131,920
9	SEEK EAGLE 0	0	2,918	5,331	1,944	0	4,266	Continuing	TBD
9	E. Acquisition Strategy After a full and open competition, a Cost Plus Incentive Fee/Award Fee contract was awarded to Hughes Missile Systems Company (now Raytheon Systems Corp (RSC)) to complete missile system development and prepare for production. This EMD contract includes three Fixed Price Incentive Fee options for Low Rate Initial Production (LRIP) Lots 1, 2, and 3. These production options are planned to be exercised in FY01, FY02, and FY03. The EMD contract and production options provide strong incentives for the contractor to control costs, achieve reliability performance and deliver on schedule. The DAB will make the LRIP decision. The Navy Acquisition Executive will make the Full Rate Production (FRP) decision with advice from the Air Force Acquisition Executive subsequent to the successful completion of the associated exit criteria. FRP Lots 4 through 7 contracts will be Firm Fixed-Price (FFP) with incentives provided if the contractor meets or beats his Procurement Price Commitment Curve (PPCC), a quantity price curve provided by RSC with the EMD proposal. Rewards or penalties are provided depending on RSC's performance relative to the PPCC. A Service review of RSC's Lot 4 through 7 proposals relative to the PPCC will be held prior to award of those contracts.	Incentive Fee/A nt and prepare f duction options sosts, achieve re the Full Rate P iteria. FRP Lot: ve (PPCC), a qu	ward Fee cont or production. are planned to liability perfor roduction (FRI 3 4 through 7 c antity price cu	This EMD con be exercised in mance and delimance and delimance and the ontracts will be tree provided by through 7 pre	ed to Hughes latract includes 1 FY01, FY02, ver on schedu advice from 1 Firm Fixed-P RSC with the aposals relative	Missile System three Fixed Pr., and FY03. T. le. The DAB v. the Air Force Price (FFP) with EMD propose 2 to the PPCC.	ss Company (ice Incentive he EMD cont will make the voquisition E h incentives I al. Rewards (will be held I be held I be the will be held I be the state of the	Fee/Award Fee contract was awarded to Hughes Missile Systems Company (now Raytheon Systems Corp pare for production. This EMD contract includes three Fixed Price Incentive Fee options for Low Rate Inipitions are planned to be exercised in FY01, FY02, and FY03. The EMD contract and production options peve reliability performance and deliver on schedule. The DAB will make the LRIP decision. Sate Production (FRP) decision with advice from the Air Force Acquisition Executive subsequent to the P Lots 4 through 7 contracts will be Firm Fixed-Price (FFP) with incentives provided if the contractor mee, a quantity price curve provided by RSC with the EMD proposal. Rewards or penalties are provided depereview of RSC's Lot 4 through 7 proposals relative to the PPCC will be held prior to award of those contra	items Corp we Rate Initial n options provide at to the tractor meets or vided depending lose contracts.
9	E. Schedule Profile		-	FY 1999	~	EY 2000	000	E	EY 2001
9	DT-IIB Safe Separation Launches Start		-	n v *	†	7	J	1	J.
99	DT-IIC Guided Launches Start Conduct Insensitive Munitions Tests			*	*				
) E	OT-IIA (Guided Launches) Starts					*	>		
399							< × ×		
33	LRIP 1 Award DT Assist Starts							×	×
	Project 674132		Pag	Page 4 of 7 Pages				Exhibit R-2 (I	Exhibit R-2 (PE 0207161F)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2000
вирсет Астіvітy 07 - Operational System Development	PE NUMBER AND TITLE 0207161F Tactical AIM Missiles	PROJECT 674132
(U) E. Schedule Profile Continued	FY 1999 2 3 4 1 2 3 4	FY 2001 1 2 3 4
* Completed Events X Planned Events Note: The above schedule profile reflects the Overarching IPT approved program adjusted to compensate for late start of the first AIM-9X separation flight test program. Since that time, the program has executed a total of eight separation flights and three guided tests between the Air Force and Navy to hold schedule. The fact-of-life Congressional decision to eliminate FY00 procurement funding moved the LRIP Icontract award to IQFY01. Other identified events remain the same.	ram adjusted to compensate for late start of the first AIM flights and three guided tests between the Air Force and oved the LRIP I contract award to IQFY01. Other identi	4-9X separation flight test d Navy to hold schedule. The ified events remain the same.
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	1001	

	RDT&E PROGRAM ELEMENT	SRAM ELE		I/PROJECT C	OST BF	COST BREAKDOWN (R-3)	WN (R-3)		DATE Fe	February 2000	8
20	вирсет астилту 07 - Operational System Development	Developme	nt		PE NUMBER AN 0207161F	PE NUMBER AND TITLE 0207161F Tactica	VD TITLE Tactical AIM Missiles	siles		.	PROJECT 674132
(E)	A. Project Cost Breakdown (\$ in Thousands)	<u>ı (\$ in Thousanc</u>	(SI				1 УД	FV 1000	00C AH		EV 2001
33333333	Project Cost Categories a. Primary Hardware Development b. Contractor Engineering Support (F-15 AIM-9X Aircraft Integration) c. Development and Test Evaluation d. Government Engineering Support e. Program Management (PMA) f. Contractor Services Support Total	Development ing Support (F-1. sst Evaluation ering Support nt (PMA)	5 AIM-9X Air	oraft Integration)			31, 6, 7, 7, 7, 49,	31,505 6,602 7,354 831 2,518 538 49,348	19,635 1,300 14,343 1,699 2,814 722 40,513	2	10,095 1,181 8,183 602 1,422 223 21,706
9	B. Budget Acquisition History and Planning Information (\$ in Thousands)	ory and Plannin	g Information	(\$ in Thousand	(51						
3	-										
	Contractor or Government	ଥ	Award or.	Performing	Project						
	Performing Activity	ding e	Obligation Date	Activity EAC	Office EAC	Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
	Product Development Organizations	izations									
	Hughes	C/CPIF	Dec 94	5,694	5,694	5,694	0	0	0	0	5,694
	Raytheon	C/CPIF	Dec 94	5,695	5,695	5,695	0	0	0	0	5,695
	Kaytheon Boeing	C/CPIF	Dec 96	136,930	136,930	52,350	31,505	19,635	10,095	17,372	130,957
	Engineering Services	Various	Various	(C,C)	/C,02 A/N	13.558	0,002 831	1,500	1,101,1	1,009	20,397
	Program Management*	PO	Various	N/A	N/A	5,782	2,518	2,814	1,422	1,553	14,089
	Note*: Based on a Memorandum of Agreement, RDT&E program costs includes Navy PMA working capital funded personnel funded at 50%/50% ratio per Service.	idum of Agreeme	ent, RDT&E pr	ogram costs incl	ludes Navy l	MA working	capital funded	personnel fun	ided at 50%/5	0% ratio per	service.
	Support and Management Organizations	ganizations								•	
	Various Contracts	FFP	Various	N/A	N/A	1,273	538	722	223	135	2,891
	Test and Evaluation Organizations Field Activities PO	<u>ations</u> PO	Oct 96	N/A	N/A	5,138	7,354	14,343	8,183	5,118	40,136
ш.	Project 674132			Pag	Page 6 of 7 Pages	ses			Exhibit	Exhibit R-3 (PE 0207161F))7161F)

RDT&E PROGRAM ELEMENT		I/PROJECT COST BREAKDOWN (R-3)	KDOWN (R-	3)	DATE Fe	February 2000	00
BUDGET ACTIVITY 07 - Operational System Development		PE NUMBER AND TITLE 0207161F Taction	PE NUMBER AND TITLE 0207161F Tactical AIM Missiles	lissiles		id 9	PROJECT 674132
Item Or Funding Description Description Description Description Description Description Description	Award or Obligation Delivery Date Date	ery Total Prior to FY 1999	Prior Budget 1999 FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
4/A	N/A N/A		0 0	0	0	0	0
	N/A N/A		0 0	0	0	0	0
N/A	N/A N/A		0 0	0	0	0	0
Subtotals Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project		Total Prior to FY 1999 92,584 1,273 5,138 98,995	EX 1999 EY 1999 92,584 41,456 1,273 538 5,138 7,354 98,995 49,348	EY 2000 25,448 722 14,343 40,513	Budget EY 2001 13,300 223 8,183 21,706	Budget to Complete 25,614 135 5,118 30,867	Total Program 198,402 2,891 40,136 241,429
Project 674132		Page 7 of 7 Pages			Exhibi	Exhibit R-3 (PE 0207161F))7161F)
		691116 / 91					

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	RDT&	RDT&E BUDGET ITEM JU		ATION	STIFICATION SHEET (R-2 Exhibit)	(R-2 Ex	chibit)		DATE	Februa	February 2000
97 07	вирсет астилту 07 - Operational System Development	tem Development			PE NUMBER AND TITLE 0207163F Advan		nced Med	Jium Rar	D тп∟E Advanced Medium Ranαe Air-to-Air Missile	-Air Mis	
	COST (\$ in Thousands)	Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate		FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
673777	77 AMRAAM		33,466	52,146	53,707	50,924	33,595	33,199	34,093	73,900	685,633
	Quantity of RDT&E Articles	rticles	0	0	0	0	0	0	0	0	0
9	A. Mission Description The Air Force and Navy air vehicle threats operat (P31) program provides fighters, (2) enhance AN (4) investigate new varie enhanced EP capabilities motor. AMRAAM is a j	A. Mission Description The Air Force and Navy developed the baseline Advanced Medium Range Air-to-Air Missile (AMRAAM) as a high performance, all weather missile to counter existing air vehicle threats operating at high or low altitude and having advanced Electronic Protection (EP) capabilities. The AMRAAM Pre-Planned Product Improvement (P3I) program provides for a continuing, Joint Air Force/Navy research and development program which enables AMRAAM to: (1) be compatible with advanced fighters, (2) enhance AMRAAM capability and operational flexibility against mid-1990's and beyond threats, (3) incorporate high payoff technology developments, and (4) investigate new variants and/or alternate missions which may use many baseline missile attributes. Currently, improvements under the P3I program include enhanced EP capabilities; improved weapon effectiveness through improved warhead, fuzing, and guidance; and increased kinematics via a new 5-inch stretched rocket motor. AMRAAM is a joint Air Force/Navy, Acquisition Category (ACAT) IC program with Air Force as lead service.	unced Mediu d having adv rce/Navy res ttional flexib which may nness through	m Range Ai vanced Elect cearch and do ility against use many ba 1 improved v	r-to-Air Mis ronic Protec evelopment mid-1990's iseline missi warhead, fuz IC program	sile (AMRA tion (EP) ca program wh and beyond le attributes, ing, and gui	AAM) as a hi pabilities. T iich enables. threats, (3) i Currently, dance; and ii	gh perform; The AMRAA AMRAAM Incorporate I improvemen improvemen irreased kir	unce, all wea MM Pre-Plan to: (1) be co nigh payoff to the under the nts under the nematics via	ther missile ned Product mpatible wi echnology d P31 prograr a new 5-incl	to counter existing Improvement th advanced levelopments, and n include h stretched rocket
99999	EY 1999 (\$ in Thousands) \$27,184 Init \$2,134 Cor \$4,148 Cor	nds) Initiated P3I Phase 3 EP and gu Continued mission support Continued test and evaluation Total	uidance EMD	0							
99999	EY 2000 (\$ in Thousands) \$50,303 Co \$1,769 Co \$74 Co	nds) Continue P3I Phase 3 improved seeker and advanced EP updates Continue mission support Continue test and evaluation Total	ed seeker and	l advanced F	3P updates						
99999	EY 2001 (\$ in Thousands) \$51,569 Co \$2,056 Co \$82 Co \$53,707 Tot	<u>ids</u>) Continue P3I Phase 3 improved seeker and advanced EP updates Continue mission support Continue test and evaluation Total	ed seeker and	l advanced E	3P updates						
Δ.	Project 673777			Page	Page 1 of 5 Pages	80				xhibit R-2	Exhibit R-2 (PE 0207163F)

	RDT&E BUDGET ITEM JU	-	-ICATION	STIFICATION SHEET (R-2 Exhibit)	R-2 Exh	bit)		DATE February 2000	2000
BUDG 07 -	вирсет астилту 07 - Operational System Development			PE NUMBER AND TITLE 0207163F Advan	AND TITLE Advance	ed Medium	Range A	ID TITLE Advanced Medium Range Air-to-Air Missile	PROJECT 6 673777
(D)	B. Budget Activity Justification This program is in budget activity 7 - Operational System Development, providing upgrades to the AIM-120C missile currently in production.	nal System De	velopment, pro	viding upgrade	s to the AIM-	120C missile cu	rrently in pr	oduction.	
9	C. Program Change Summary (\$\sumshipsis \text{in Thousands})	(spu							
					FY 1999	FY 2000		FY 2001	Total Cost
9	Previous President's Budget (FY 2000 PBR)				35,663	49,783		54,184	687,364
9	Appropriated Value				36,078	52,783			
9	Adjustments to Appropriated Value								
	a. Congressional/General Reductions				415	-22			
	b. Small Business Innovative Research				-1,050				
	c. Omnibus or Other Above Threshold Reprogram	ram				-286			
	d. Below Threshold Reprogram				096-				
	e. Rescissions				-187	-329			
	i. Ottiei								
<u>99</u>	Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR	BR			33,466	52,146		-477 53,707	685,633
_	Note: \$408K cancelled year bill included in FY99 Below Threshold Reprogramming total	Y99 Below Th	reshold Reprog	gramming total.					
<u> </u>	Significant Program Changes: None.								
9	D. Other Program Funding Summary (\$ in Thousands)	(housands)							
	FY 1999	FY 2000	FY 2001	FY 2002	FX 2003	FY 2004	FY 2005	Cost to	Total Cost
		Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
<u> </u>	Missile Procurement, Budget 89,714 Activity #2, PE 0207163F,	89,670	98,075	115,384	109,564	110,846	112,426	241,780	6,814,123
	P-1 Line Item, AMRAAM								
9	Replenishment Spares, BP25 5,196	327	234	240	238	195	281	400	90,036
	es, BP26 72	192	138	119	124	123	123	400	63,653
<u> </u>	Seek Eagle 0	0	612	0	0	0	0	0	15,137
Ŗ	Project 673777		Pag	Page 2 of 5 Pages				Exhibit R-2 (PE 0207163F)	E 0207163F)

	RDT&E BUDGET ITEM JUSTIFICATION	STIFICATION SHEET (R-2 Exhibit)	DATE February 2000
900 04	вирсет астилту 07 - Operational System Development	PE NUMBER AND TITLE 0207163F Advanced Medium Range Air-to-Air Missile	PROJECT Ir-to-Air Missile 673777
9	E. Acquisition Strategy The AMRAAM Pre-Planned Product Improvement (P3I) program takes advantage of emerging technologies to update and expand the system capabilities to meet new user requirements. The Phase 1 missile, currently in production, allows carriage on the F-22 with clipped wings and fins as well as providing some software enhancements. The Phase 2 AIM-120 C4 missile adds a new warhead which increases lethality and the AIM-120 C5 missile has a +5 inch rocket motor for kinematic improvements. The first Phase 2 AIM-120 C4 missile was delivered in Aug of FY99. The AIM-120 C5 missiles will begin delivery in Jul of FY00. The Phase 3 missile is the first major upgrade to the seeker hardware and software to meet performance requirements for the 2003 time-period. A Cost Plus Award Fee EMD contract was awarded on 29 Oct 1999. This missile will begin deliveries in FY04. The second stage of Phase 3, beginning in FY04, will develop a new rocket motor to meet increased kinematic requirements.	itage of emerging technologies to update and expand the ge on the F-22 with clipped wings and fins as well as proincreases lethality and the AIM-120 C5 missile has a +5 of FY99. The AIM-120 C5 missiles will begin delivery in ance requirements for the 2003 time-period. A Cost Plucond stage of Phase 3, beginning in FY04, will develop a	system capabilities to meet new oviding some software inch rocket motor for kinematic in Jul of FY00. The Phase 3 missile us Award Fee EMD contract was 1 new rocket motor to meet
9	E. Schedule Profile	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	EY 2001
293333	P31 Phase 2 Tape 7B FIt Test Comp P31 Phase 2 Secker EMD Contract Award P31 Phase 3 Secker System Design Review (PDR) P31 Phase 3 Secker Preliminary Design Review (PDR) P31 Phase 3 Secker Preliminary Design Review (PDR) P31 Phase 3 Secker Critical Design Review (PDR) P31 Phase 5 Secker Critical Design Review (CDR) Schedule Changes: The Fuzing FCA schedule slip was caused by an increase in the software development schedule associated with the Quadrant-sensing Target Detection Device (QTDD).	* X X X X X X Another associated with the Quadrant-sensing	X Target Detection Device (QTDD).
	Project 673777	Page 3 of 5 Pages	Exhibit R-2 (PE 0207163F)

	RDT&E PROGRAM ELEMENT	RAM ELE		/PROJECT C	OST BE	COST BREAKDOWN (R-3)	NN (R-3)		DATE Fe	February 2000	00
20	вирсет аститу 07 - Operational System Development	Developme	nt		PE NUMBER AI 0207163F	_	וס דודר ה Advanced Medium Range Air-to-Air Missile	ım Range	Air-to-Air		РРОЈЕСТ 673777
(c)	A. Project Cost Breakdown (\$ in Thousands)	(\$ in Thousand	(Sp					000	000 181		1000
55	a. Phase 3 EMD Improved Seeker and Advanced EP Updatesb. Gov Mission Support	eeker and Adva	nced EP Update	S			27,184 27,184 2,134	7,184 2,134	50,303 50,303 1,769	Э. ж. ф.	51,569 2,056
33	c. Gov Test & Evaluation Total						4,148 33,466	4,148 13,466	74 52,146	+ ′0	82 53,707
3	B. Budget Acquisition History and Planning Information (\$ in Thousands)	ry and Plannin	g Information	(\$ in Thousand	S						
3	Performing Organizations:										
	Contractor or	Contract Method/Tyne	Awardor	Performing	Project						
	Performing	or Funding	Obligation	Activity	Office	Total Prior	Budget	Budget	Budget	Budget to	Total
	Activity	Vehicle	Date	EAC	EAC	to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
	Product Development Organizations Misc. Contracts SS/FF	SS/FFP	Annual	N/A	N/A	8,470	232	1,308	855	6,521	17,386
	F08635-90-C-0201 Hughes	SS/FFP	Aug 90	5,200	5,200	5,200	0	0	0	0	5,200
	F08626-91-C-0034 Hughes	SS/CPIF	Mar 91	93,506	93,506	93,506	0	0	0	0	93,506
	F08626-93-C-0044 (Phase 2)	SS/CPAF	Jun 94	117,558	117,558	117,558	0	0	0	0	117,558
	Hughes		!				,	,			
	Phase 3 Risk Reduction	SS/CPAF	Oct 95	24,484	24,484	24,484	0	0 0	0	0 0	24,484
	rnase 3 miproved ruzing Capability	SS/CFAF	001 33	1,07,0	797,0	>	7,407	>	0	>	7,07,0
	Phase 3 Improved Seeker and SS/CPAF	SS/CPAF	Oct 99	199,365	199,365	455	21,665	48,995	50,714	77,313	199,142
	EMD Contract Phase 3	SS/CPAF	Oct 04	128,707	128,707	0	0	0	0	128,707	128,707
	Follow on										`
	*Note: Hughes became part of Raytheon Systems effective Dec 97 Support and Management Organizations	f Raytheon Sys	tems effective I	Jec 97							
	COEA	PO/MIPR	Jan 94	N/A	N/A	3,358	0	0	0	0	3,358
	Contractor Support	REO/PR	Annual	N/A	N/A	14,719	1,467	1,229	1,420	8,024	26,859
	JSPO Operations	PR/IMPAC	Annual	N/A	N/A	17,671	<i>L</i> 99	540	989	3,720	23,234
ш	Project 673777			Pag	Page 4 of 5 Pages	Se			Exhibi	Exhibit R-3 (PE 0207163F)	07163F)

	RDT&E PROGRAM ELEMENT		PROJECT COST BREAKDOWN (R-3)	OST BF	REAKDO!	VN (R-3)		DATE Fe	February 2000	8
BUDGE 07 - (вирсет астилту 07 - Operational System Development	ent		PE NUMBER AN 0207163F		ced Medit	ım Range	Air-to-Ai	ID TITLE Advanced Medium Range Air-to-Air Missile 673777	PROJECT 673777
(U) II	Performing Organizations Continued: Test and Evaluation Organizations Government Test REO/MIPR	Annual	N/A	N/A	32,802	4,148	74	82	1,426	38,532
	Government Furnished Property: Contract Method/Type Item Or Funding Description Vehicle Product Development Property	Award or Obligation Date	<u>Delivery</u> <u>Date</u>		Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	<u>Total</u> Program
a wall monne	Not Applicable Support and Management Property Not Applicable Test and Evaluation Property TM/ECM Pods Subtotals Subtotal Product Development Subtotal Test and Evaluation Total Project	Amual			2,380 Total Prior to FY 1999 249,673 35,748 35,182 320,603	0 Budget FY 1999 27,184 2,134 4,148 33,466	0 <u>Budget</u> <u>FY 2000</u> 50,303 1,769 74 52,146	0 Budget EY 2001 51,569 2,056 82 53,707	0 <u>Sudget to</u> <u>Complete</u> 212,541 11,744 1,426 225,711	2,380 Total Program 591,270 53,451 40,912 685,633
Pro	Project 673777		Pag	Page 5 of 5 Pages	s			Exhibi	Exhibit R-3 (PE 0207163F))7163F)

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	RDT&E BUDGET ITEM JU	STIFIC	ATION	ISTIFICATION SHEET (R-2 Exhibit)	(R-2 Ex	hibit)		DATE	February 2000	ry 2000
BUDGET ACTIVITY 07 - Operatic	BUDGET ACTIVITY O7 - Operational System Development			PE NUMBER 0207247	PE NUMBER AND TITLE 0207247F Air Fo	PE NUMBER AND TITLE 0207247F Air Force TENCAP	CAP			PROJECT 670001
	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
670001	Air Force TENCAP	6,003	12,929	9,826	10,779	10,497	10,707	10,919	10,919 Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

A. Mission Description

capabilities into military operations for tactical use by warfighters. AF TENCAP expedites improvements to Air Force combat capabilities through rapid-prototyping projects that culminate in operational concept demonstrations. Although not a developmental program per normal acquisition guidelines, the program does support The Congressionally-mandated Air Force Tactical Exploitation of National Capabilities (AF TENCAP) program pursues seamless integration of space systems' future operational systems development: successfully-demonstrated concepts are transitioned to users for fielding and deployment. Additionally, AF TENCAP-developed equipment is deployed in support of real-world contingency operations.

AF TENCAP leverages investments in space systems for tactical warfighter use in three ways, through six program branches denoted by the identifier 'TENCAP' (previously 'TALON');

- 1) Exploiting existing space systems for tactical applications. AF TENCAP conceives and demonstrates capabilities to exploit these systems through rapid-prototyping projects in four program divisions:
- --TENCAP Command provides space systems with applications to enhance Theater Battle Management support for Command and Control (C2) systems
 - --TENCAP Knight provides space system capabilities in tailored applications for use by Special Operations Forces
- --TENCAP Shooter gets time-critical intelligence obtained by space systems into aircraft cockpits and/or weapons to support weapons delivery
- --TENCAP Ready provides space systems products and applications for intelligence preparation of the battlefield through mission planning, preparation, rehearsal, and combat execution
- 2) TENCAP Vision influences the design and operation of new space systems for warfighters by advocating tactical applications and missions for them (in the form of analyses and integration of space systems into roadmaps and architectures for Air Force weapons/C4I systems)
- demonstrations. TENCAP Warrior also supports RDT&E for and sustains (through Operations & Maintenance funds) specialized aerospace integration facilities that 3) TENCAP Warrior supports education and training of operational forces in emerging space and space-related technologies and concepts, as well as education of national providers about operational user requirements and environments, through participation in combat and contingency operations, exercises, and project enhance such education and training.

Project 670001

Page 1 of 6 Pages

Exhibit R-2 (PE 0207247F)

	RDT&E BUDGET ITEM JUS	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	it)	DATE February 2000	;
20	BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0207247F Air Force TENCAP	TENCAP	PROJECT 670001	лест 001
<u>(3)</u>	A. Mission Description Continued				
<u> </u>	FY 1999 (\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\	for tactical applications; influenced design of future space systems; supported RDT&E for training facilities pt demonstrations to field	space systems; suppor	rted RDT&E for training facilit	ies
5555555	\$8,291 Exploiting existing space systems for tactical applications; is \$3,000 Developing and testing hyperspectral imagery sensors and estions and esting hyperspectral imagery sensors and estions and estions and estions and estions and estions are also and estions and estions and estions are also are also and estions and estions and estions are also ar	ids) Exploiting existing space systems for tactical applications; influencing design of future space systems; supporting RDT&E for training facilities Developing and testing hyperspectral imagery sensors and exploitation tools (per FY00 Congressional direction) Transitioning AF TENCAP concept demonstrations to field Contract bridge activities Program support Total	re space systems; supp 00 Congressional direc	orting RDT&E for training facition)	ilities
<u> </u>	\$9,141 Exploiting existing space systems for tactical applications; i \$1,00 Developing and testing hyperspectral imagery sensors and e \$3.85 Transitioning AF TENCAP concept demonstrations to field \$2.00 Program support Total	Ids) Exploiting existing space systems for tactical applications; influencing design of future space systems Developing and testing hyperspectral imagery sensors and exploitation tools (completing FY00 Congressional direction) Transitioning AF TENCAP concept demonstrations to field Program support Total	re space systems ting FY00 Congressio	onal direction)	
9	B. Budget Activity Justification Since this effort supports fielded systems, it is in Budget Activity #7, 'Operational Systems Development'.	Activity #7, 'Operational Systems Development'.			
9	C. Program Change Summary (\$\sumsite\$ in Thousands)	FV 1999	FV 2000	FV 2001	Total Cost
999	Previous President's Budget (FY 2000 PBR) Appropriated Value Adjustments to Appropriated Value a. Congressional/General Reductions b. Small Business Innovative Research	6,328 6,447 -119 -206	10,102		TBD
ď	Project 670001	Page 2 of 6 Pages		Exhibit R-2 (PE 0207247F)	247F)

	RDT&E BUDGET ITEM JU	M JUSTIF	ICATION	STIFICATION SHEET (R-2 Exhibit)	R-2 Exhi	bit)	۵	DATE February 2000	y 2000
8UD 07	BUDGET ACTIVITY O7 - Operational System Development			PE NUMBER AND TITLE 0207247F Air Fo	AND TITLE : Air Forc	PE NUMBER AND TITLE 0207247F Air Force TENCAP			PROJECT 670001
(D)	C. Program Change Summary (\$ in Thousands) Continued	nds) Continue	7		FY 1999	FY 2000	:	FY 2001	Total Cost
	c. Omnibus or Other Above Threshold Reprogram	am				-71			
	d. Below Threshold Reprogram				-85				
	e. Rescissions				-34	-102	61		Š
E	t. Other Adjustments to Budget Years Since FV 2000 PBR	RR						-88	TBD
3	Current Budget Submit/FY 2001 PBR	X			6,003	12,929		9,826	TBD
5	Significant Program Changes: FY 1999: \$85K reprogrammed to support higher Air Force priorities FY 2001: \$88K adjustment to fund higher Air Force priorities	er Air Force pri Force priorities	orities						
3	(U) D. Other Program Funding Summary (S in Thousands) FY 1999 FY 2000	Thousands) FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to	Total Cost
9	Actual Other Procurement funding in 190 'Intelligence Communications Equipment', WSC 832070	Estimate 192	Estimate 196	Estimate 197	Estimate 196	Estimate 199	Estimate 203	Continuing	TBD
<u>(2)</u>	E. Acquisition Strategy Cost plus award fee contract with a ceiling of hours available to AF TENCAP. Theater MAJCOM mission area plan (MAP) deficiencies provide the requirements for AF TENCAP development projects. Each project must correct a MAP deficiency or deficiencies and be approved by an AF TENCAP O-6 (Colonel) Review Group. In addition, theater MAJCOMs must be willing to assume future acquisition and logistics responsibilities, budgeting for projects in their Program Objective Memorandums.	ours available to ct must correct assume future a	o AF TENCAF a MAP defici	 Theater MA ency or deficie Iogistics respo 	JCOM missio ncies and be a nsibilities, bu	n area plan (M pproved by an dgeting for pro	AP) deficienc AF TENCAP sjects in their	ies provide the red O-6 (Colonel) Re Program Objectiv	quirements for eview Group. In e Memorandums.
9	F. Schedule Profile			FY 1999		EY 2000	000	E	FY 2001
			1	2 3	4	1 2	3 4	1 2	3 4
5555	Contractor Proposals for FY00 Projects FY00 Project Evaluated and Approved FY00 Project Authority to Proceed FY01 Projects Identified				* * *	*	;		
9	Contractor Proposals for FY01 Projects						×		
	Project 670001		Pag	Page 3 of 6 Pages				Exhibit R-2 (Exhibit R-2 (PE 0207247F)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2000
вирсет астилту 07 - Operational System Development	PE NUMBER AND TITLE 0207247F Air Force TENCAP	PROJECT 670001
(U) E. Schedule Profile Continued	FY 1999 FY 2000 2 3 4 1 2 3 4	FY 2001 1 2 3 4
 (U) FY01 Projects Evaluated and Approved (U) FY02 Project Authority to Proceed (U) FY02 Projects Identified (U) Contractor Proposals for FY02 Projects (U) FY02 Projects Evaluated and Approved 		××
* = Completed Event X = Planned Event		
Project 670001	Page 4 of 6 Pages	Exhibit R-2 (PE 0207247F)

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		1						DATE		
	RDT&E PROGRAM ELEMEN		I/PROJECT COST BREAKDOWN (R-3)	OST BF	SEAKDOV	VN (R-3)			February 2000	0
BUD(07 -	вирсет астилту 07 - Operational System Development	ent		PE NUMBER AN 0207247F	PE NUMBER AND TITLE 0207247F Air For	ID TITLE Air Force TENCAP	 		. 9	РРОЈЕСТ 670001
(D)	A. Project Cost Breakdown (\$ in Thousands)	(spu								
						FY 1999	939 939	FY 2000	a	FY 2001
9	Exploiting existing space systems for tactical applications	al applications				3,(3,613	7,114	•	7,867
9	Influencing design of future space systems					5	974	880		1,274
9	Supporting RDT&E for aerospace integration facilities	on facilities				7	478	297		0
9	Developing/testing hyperspectral imagery sensors/exploitation (per FY00 Congressional direction)	ensors/exploitat	ion (per FY00 Co	ongressional	direction)		0	3,000	•	100
9	Transitioning concept demonstrations to field	ld Id				, -	191	1,098	~	385
3	Contract Bridge Activities			-			0	158	•	0
3	Program Support					1	171	382	•	200
9	Total					6,0	6,003	12,929	•	9,826
	*This section has been revised since the FY 2000 President's Budget submission to display costs by AF TENCAP mission rather than AF TENCAP division *AF TENCAP RDT&E-funded aerospace integration facility upgrade efforts complete in FY 2000, but facility sustainment efforts (financed by Operations of the complete in FY 2000) and the complete in FY 2000 integral managed are spaced as a complete in FY 2000 integral managed are spaced as a complete in FY 2000 integral managed are spaced as a complete in FY 2000 integral managed are spaced as a complete in FY 2000 integral managed are spaced as a complete in FY 2000 integral managed are spaced as a complete in FY 2000 integral managed are spaced as a complete in FY 2000 integral managed as a complete integral managed as a complete in FY 2000 integral managed as a complete integral	7 2000 President ntegration facili	ident's Budget submission to display costs by AF TENCAP mission rather than AF TENCAP division facility upgrade efforts complete in FY 2000, but facility sustainment efforts (financed by Operations &	ssion to displ s complete in	ay costs by AF 1 FY 2000, but	TENCAP mis facility sustai	ssion rather th nment efforts	lan AF TENC (financed by	AP division Operations &	
	Maintenance appropriations) will continue. *Program support costs increase in FY 2000 to support transition of the AF TENCAP acquisition function from Schriever AFB to Peterson AFB	0 to support tran	ısition of the AF	TENCAP ac	quisition functi	on from Schri	ever AFB to I	Peterson AFE	-	
9	B. Budget Acquisition History and Planning Information (\$ in Thousands)	ing Informatio	n (\$ in Thousanc	(SI						
9	Performing Organizations:									
	Contractor or									
	Government Method/Type Performing or Funding	Award or Ohlication	Performing Activity	Project Office	Total Prior	Rudaet	Rudaet	Budget	Rudget to	Total
		Date	EAC	EAC	to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
	Product Development Organizations								•	ı
	Not Applicable									
	Support and Management Organizations									
	Multiple Various	Multiple			19,568	1,127	6,682	5,896	Continuing	TBD
	Lockheed Martin CPAF	Sept 95	Continuing C	Continuing	31,559	4,876	6,070	0	0	42,505
	Future Contract TBD	Aug 00	TBD C	Continuing	0	0	177	3,930	Continuing	TBD
	Test and Evaluation Organizations									
	Not Applicable									
Д	Project 670001		Pag	Page 5 of 6 Pages	es			Exhibi	Exhibit R-3 (PE 0207247F)	7247F)
				1105						

RDT&E PROGRAM ELEMENT/PROJECT	(/PROJECT COST BREAKDOWN (R-3)	VN (R-3)		DATE F.	February 2000	٩
вирсет астіліту 07 - Operational System Development	PE NUMBER AND TITLE 0207247F Air For	ID TITLE Air Force TENCAP	 _{&}		9	РРОЈЕСТ 670001
(U) Government Furnished Property: Contract Method/Type Award or Item or Funding Obligation Delivery Description Vehicle Date Product Development Property None Support and Management Property	Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
None Test and Evaluation Property None	E		•		; •	
<u>Subtotals</u> Subtotal Product Development	<u> 1 otal Prior</u> <u>to FY 1999</u>	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	<u>Total</u> Program
Subtotal Support and Management Subtotal Test and Evaluation	51,127	6,003	12,929	9,826	TBD	TBD
Total Project	51,127	6,003	12,929	9,826	TBD	TBD
Project 670001	Page 6 of 6 Pages			Exhibi	Exhibit R-3 (PE 0207247F)	7247F)

	RDT&E BUDGET ITEM JU		ATION	STIFICATION SHEET (R-2 Exhibit)	(R-2 Ex	hibit)		DATE		February 2000
BUD(BUDGET ACTIVITY O7 - Operational System Development			PE NUMBER AN 0207253F		ID TITLE Compass Call				РВОЈЕСТ 674804
	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate		FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
674804	04 Compass Call	11,892	12,837	5,834	3,886	3,879	3,870	0	0	40,759
	Quantity of RDT&E Articles	2	2	2	2	2	2	0	0	0
3	A. Mission Description COMPASS CALL is DoD's airborne wide area coverage offensive counter information system. It denies, disrupts, degrades and deceives adversary voice and data communications, preventing and managing his ability to effectively command and control his forces in the field. The Tactical Radio Acquisition and Countermeasures communications, preventing and managing his ability to effectively command and control his forces in the field. The Tactical Radio Acquisition and Countermeasures Subsystem (TRACS) replaces the aging compressive receiver suite responsible for acquiring target systems with a digital, reprogrammable receiver that will enable COMPASS CALL to remain viable in countering the next generation of deployed threats. TRACS EMD and flight testing are urgently needed to complete TRACS development and enable the start of production to replace the COMPASS CALL fleet's aging receiver subsystem. The current receiver is late 1970's vintage and must be replaced to meet deployed threats and alleviate impending supportability problems. The reprogrammable nature of TRACS will allow it to remain viable for the extended future through software upgrades will be developed beginning in FY02 and continue throughout the life of the program, ensuring COMPASS CALL stays abreast of rapidly emerging threat technologies.	rage offensivy to effective e receiver suit e next genera place the CO anding suppor apgrades will tologies.	e counter in ly commander responsibition of depliance MPASS CA tability probe de develope	iformation sy d and contro le for acquir oyed threats. AL fleet's ag blems. The i	ystem. It der I his forces i ing target sy TRACS El jing receiver reprogramm: in FY02 and	nies, disrupti n the field. ' stems with a MD and fligl subsystem. able nature o 1 continue th	s, degrades i The Tactica i digital, rep ht testing ar The curren if TRACS w	and deceives I Radio Acq rogrammabl urgently ne t receiver is rill allow it t	s adversary w uisition and (le receiver th: eeded to com late 1970's v o remain vial program, ens	age offensive counter information system. It denies, disrupts, degrades and deceives adversary voice and data to effectively command and control his forces in the field. The Tactical Radio Acquisition and Countermeasures receiver suite responsible for acquiring target systems with a digital, reprogrammable receiver that will enable next generation of deployed threats. TRACS EMD and flight testing are urgently needed to complete TRACS lace the COMPASS CALL fleet's aging receiver subsystem. The current receiver is late 1970's vintage and must be ding supportability problems. The reprogrammable nature of TRACS will allow it to remain viable for the grades will be developed beginning in FY02 and continue throughout the life of the program, ensuring COMPASS logies.
99999	FY 1999 (\$\frac{\$\frac{1}{2}\text{ in Thousands}}{\text{Started non-recurring engineering (NRE)}} \text{ acti } \text{\$\$\$\$\$\$500} \text{Initiated flight test planning} \$	ering (NRE) s logy trade stu	ctivities for dy	ing (NRE) activities for TRACS-C production gy trade study	production					
99999	FY 2000 (\$ in Thousands) \$4,200 Continue TRACS-C development and integration \$453 Start flight test activities for TRACS-C \$8,184 TRACS-F Development \$12,837 Total	ment and inte	gration							
	Project 674804		Page	Page 1 of 4 Pages	Š			_	Exhibit R-2	Exhibit R-2 (PE 0207253F)

	RDT&E BUDGET ITEM JU		STIFICATION SHEET (R-2 Exhibit)	SHEET	(R-2 Exh	ibit)		DATE February 2000	y 2000
8UD 07	вирсет астилту 07 - Operational System Development	nt		PE NUMBER AND TITLE 0207253F Comp	PE NUMBER AND TITLE 0207253F Compass Call	ss Call			PROJECT 674804
9	A. Mission Description Continued								
99999	FY 2001 (\$\\$\\$\\$\\$\\$\\$\ \text{complete TRACS-C development and integration \$4,548 \qquad \text{Complete TRACS-C development and integration \$986 \qquad \text{Continue flight test for TRACS-C }\$300 \qquad \text{Conduct TRACS-F ground demonstration }\$5,834 \qquad \text{Total}	development and r TRACS-C ound demonstrat	integration ion						
<u>6</u>	B. Budget Activity Justification This program is categorized as Budget Activity 7 because it provides for development of technologies and capabilities in support of operational system development.	ity 7 because it p	rovides for dev	relopment of te	chnologies an	d capabilities i	n support of c	perational system	development.
9	C. Program Change Summary (\$ in Thousands)	sands)							
5	Previous President's Budget (FY 2000 PBR)				FY 1999 12,419	EY 2000 4,908		FY 2001 5,886	<u>Total Cost</u> 40,759
38	Appropriated Value Adjustments to Appropriated Value				12,500	12,908	x 0		
,	a. Congressional/General Reductions b. Small Business Innovative Research c. Omnibus or Other Above Threshold Reprogram	oram			-81 -460	12-	_		
	d. Below Threshold Reprogram				17		-		
	f. Other				/0-				
99	Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR) PBR			11,892	12,837	7	-52 5,834	
9	Significant Program Changes:								
9	D. Other Program Funding Summary (\$ in Thousands) FY 1999 FY 2000	Thousands) FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to	Total Cost
5	(U) PE 0207253F, Aircraft 7,205 Modification (3010)	<u>Estimate</u> 9,260	Estimate 16,729	Estimate 23,039	Estimate 31,447	Estimate 17,650	Estimate 8,341	Complete	TBD
<u>D</u>	Project 674804		Pag	Page 2 of 4 Pages				Exhibit R-2 (PE 0207253E)	F 0207253E)
				200					L 0201 E001 /

RDT&E BUDGET ITEM JU	T ITEM JUSTIFICATION	STIFICATION SHEET (R-2 Exhibit)	DATE		February 2000	
BUDGET ACTIVITY 107 - Operational System Development		PE NUMBER AND TITLE 0207253F Compass Call			PROJECT 674804	ст 04
(U) E. Acquisition Strategy CPAF contracting will be employed for both EMD and the program will employ CPIF contracting.	h EMD and	flight test in FY00 and 01. Upgrades for waveform development to preserve system viability for the remainder of	to preserve syste	m viability	for the remain	der of
(U) E. Schedule Profile		EY 1999 EY 2000)00 7	-	EY 2001	_
 (U) TRACS-C EMD Starts (U) TRACS-C Production Long Lead Starts (U) TRACS-C Flight Test Begins (U) TRACS-C EMD Unit Deliveries Begin 	th th	T *		-		
 Denotes completed event X Denotes planned event 						· · · · <u>- · · · · · · · · · · · · · · ·</u>
Project 674804	Page	Page 3 of 4 Pages		Exhibit R-2	Exhibit R-2 (PE 0207253F)	3F)
		· ·				

	RDT&E PROGRAM ELEMENT		/PROJECT CO	OST BF	COST BREAKDOWN (R-3)	VN (R-3)		DATE F €	February 2000	00
900 07 -	вирсет Астилту 07 - Operational System Development	ent		PE NUMBER AT 0207253F		AD TITLE Compass Call			μ ψ	РRОЈЕСТ 674804
<u> </u>	A. Project Cost Breakdown (\$ in Thousands)	(spu				1 737	000	70° /XL	Ş	1000 187
5	Hardware/Software Development					11.892	33 E	FY 2000 12.384	ੜ +	FY 2001 4.848
3	System Integration						1	453	· w	986
<u>e</u>	Total					11,	11,892	12,837	7	5,834
9	B. Budget Acquisition History and Planning Information (\$ in Thousands)	ing Information ((S in Thousand	ଜ						
9	Performing Organizations:									
,	- •									
	Government Method/Type Performing or Funding	2 Award or Obligation	Performing Activity	Project Office	Total Prior	Rudaet	Budget	Rudaet	Budget to	Total
		Date	EAC	EAC	to FY 1999	EY 1999	FY 2000	FY 2001	Complete	Program
	Development Organiz								()	
	Sanders CPAF/IF	FY99	TBD	TBD		11,892	12,384	4,848	10,196	39,320
	Support and Management Organizations									•
	None									
	and Evaluation Organizat		Ğ	Í			,	Č	•	
	IBD	F Y 00	IBD	IBU			453	986	0 .	1,439
					Total Prior	Budget	Budget	Budget	Budget to	Total
	Subtotals				to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
	Subtotal Product Development					11,892	12,384	4,848	10,196	39,320
	Subtotal Support and Management						•			
	Subtotal Test and Evaluation						453	986	0	1,439
	Total Project					11,892	12,837	5,834	10,196	40,759
۵	Project 674804		Page	Page 4 of 4 Pages	es			Exhib	Exhibit R-3 (PE 0207253F)	07253F)

PROJECT ACTIVITY OCOST (\$ in Thousands) For 1999 For			RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ISTIFIC	ATION	SHEET	(R-2 Ex	thibit)		DATE	February 2000	y 2000
COSTT (\$ in Thousands) FY 1989 FY 2000 FY 2001 Ferinate Estimate Estimate Estimate Estimate Estimate Component Program (CP) For 1989 FY 2000 FY 2001 FY 2002 FY 2004 FY 2005 FY 2005 FY 2005 FY 2004 FY 2005 FY 2004 FY 2005 FY 2004 FY 2005 FY 2005 FY 2004 FY 2005	80Di 07 .	GET ACTI - Opera	v⊓∀ ational System Development			РЕ NUMBEF 0207268 Progran	RAND TITLE F Aircra (CIP)	ıft Engine	e Compo	nent Imp	rovemen	
Ocuanity of RDTRE Articles Ocuanity of RDTRE Articles A.Mission Description The Articrath Engine Component Improvement Program A.Mission Description The Articrath Engine Component Improvement Program (CIP) provides critical sustaining engineering support (only source) for in-service Air Force engines through their service life. Aircraft Brighte Component Improvement Program (CIP) provides critical sustaining engineering support (only source) for in-service Air Force engines through the articles through described deficiencies and reduces total ownership coast (KTOC). The program's highest priority is to maintain flight safety, but also improves system Operational Readiness (OR) and Reliability and Maintainability (R&M). Historically, aircraft systems change missions, taci and environments none red changing threats throughout their lives. Numerous new problems: Engine CIP flunding defloyment, production, and service, and Engine CIP provides the only finds to develop fixes for these field problems. Engine CIP provides the only find events and proper continues over the engine Provides the only finds to develop fixes for these filed problems are life gradual by certaining to an iminimum Perel (stafvy)deptor) in the engines the operational Engine CIP provides and an evel to provide the engines ocution and safety problems arise throughout a system's service life, Engine CIP must be maintained at a level to provide the engine engines. Since operational and safety problems arise throughout a system's service life, Engine CIP enurses continued improvements in engine R& factors, which reduce outyear support costs. Historically, R&M related Engine CIP efforts to make the changine Engine CIP enurses of the engines support to make the changine system performance at affortable costs. Engine CIP enurses continued by Engine CIP outyear support funding would have to be increased drastically. For 1992 (s. in Thousand) S66.02 Retolement, oil, lubricants and other support costs Propled 677012. Protal Protal Protal Prot			COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
A Mission Description The Aircraft Engine Component Improvement Program (CIP) provides critical sustaining engineering support (only source) for in-service Air Force engines throughou their service life. Aircraft Engine Component Improvement Program (CIP) provides critical sustaining engineering support (only source) for in-service Air Force engines throughou their service life. Aircraft Engine Component Improvement Program Readiness (OR) and Rehibility and Maintainiability (RAM.). Historically, aircraft systems chapter principles to service revealed deficiencies and reduces total ownership costs (RTOC). The program's highest priority is to maintain flight safety, but a solir improves system Operational Readiness (OR) and Rehibility and Maintainiability (RAM.). Historically, aircraft systems chapter and environments to meet changing threats throughout their lives. Numerous new those field problems. Engine CIP father and enholes the only finds to develop fixes for these field problems. Engine CIP father by the total engine quantity. Engine CIP stafes with delivery of the first production engines which total engines the advantage of the stafes with delivery of the first production engines in conformed to the changes sensitied for continued stafes problems arise throughout a system's service life. Engine CIP ensures continued inprovements in engine addresses out-of-warranty usage and life and enables the Air force to obtain additional warranties when maintained at a level to provide the engines spaces. Historically, RAM related Engine CIP efforts reduce outyear Operations and Maintenance (O&M) and spares costs by a ratio greater than 21 to 1. MAJCOMs assume a viable Engine CIP effort is place when submitting their budget requests for O&M and engine spares. Without the outyear cost avoidance provided by Engine CIP effort selection and Maintenance (O&M) and spares costs by a ratio greater than 21 to 1. Majcams and other support costs. FEY 1990 (\$\$\frac{1}{2}\$ in Thousamads) FEX 1992 (\$\frac{1}{2}\$ in Thousamads)	6710		craft Engine Component Improvement Program	93,338	158,329	166,926	174,127	186,200	211,043	168,638	Continuing	TBD
$ ho_{ m rc}$		Qui	antity of RDT&E Articles	0	0	0	0	0	0	0	0	0
\$80,215	5	A. Mis The Ai their se flight s and en produc types/n continu address produci support factors, ratio gr	sion Description reraft Engine Component Improvement Progra afety, but also improves system Operational R. vironments to meet changing threats throughou tion, and service, and Engine CIP provides the naturity of engines, not by the total engine qua nes over the engine's life, gradually decreasing ses out-of-warranty usage and life and enables tion engines. Since operational and safety prol t to make the changes essential for continued s which reduce outyear support costs. Historic eater than 21 to 1. MAJCOMs assume a viabl r cost avoidance provided by Engine CIP, outy	m (CIP) pro e revealed de adiness (OI t their lives. only funds t utity. Engin to a minimu he Air Forc olems arise t thisfactory si ally, R&M r Engine CII	vides critics efficiencies s x) and Relia Numerous o develop f e CIP starts m level (saf e to obtain s hroughout a ystem perfo elated Engit P effort is in unding wou	al sustaining and reduces the bility and M inew problet ixes for these with deliver ety/depot rejety/depot rejety/depot additional with the companie of the contrained at after the contrained at after the fort the land to be the contrained at the contrained at after the contrained at the contrained a	engineering total owners laintainabilit ms can deve e field probl y of the first pairs) sufficiarranties whervice life, Enfordable costs reduce out submitting e increased of	is support (on hip costs (R?) y (R&M). I lop in the en ems. Engine t production lient to keep on manufact agine CIP mists. Engine Cyperati their budget drastically.	ly source) fer FOC). The Jastorically, gines through engine purchagners in corporate in the single of the single o	or in-service program's hi aircraft syst in actual use g is driven thased with provide Engine ained at a le continued in intenance (CO&M and e	Air Force en ghest priority ems change r during deplc during deplc by field event procurement apperational. CIP improved to provid approvements b&M) and sp. Regine spares	gines throughout is to maintain nissions, tactics, yment, s and funds, and Engine CIP ements into e the engineering in engine R&M ares costs by a Without the
Page 1 of 5 Pages	<u> </u>	EY 195 \$80,21. \$6,602 \$6,521 \$93,333	9 (\$ in Thousar 5 8	sks, 293 rep. ther suppor	air developr t costs	nent tasks, a	nd 69 analy:	sis tasks)				
	<u> </u>	Project 6	71012		Page	1 of 5 Page	S				Exhibit R-2 (PE 0207268F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	HEET (R-2 Exhib	it)	DATE February 2000	2000
902 -	BUDGET ACTIVITY 07 - Operational System Development Pre	PE NUMBER AND TITLE 0207268F Aircraft Er Program (CIP)	ngine Compc	PE NUMBER AND TITLE 0207268F Aircraft Engine Component Improvement Program (CIP)	РРОЈЕСТ 671012
(D)	A. Mission Description Continued				
99999	FY 2000 (\$\frac{\$\text{in Thousands}}{774 CIP tasks (294 redesign tasks, 378 repair development tasks, and 102 analysis tasks) \$24,301	tasks, and 102 analysis tas	sks)		SCANO.
99999	FY 2001 (\$\frac{\$\frac{1}{2}\times \text{Thousands}}{785\text{ CIP tasks}} (294\text{ redesign tasks}, 378\text{ repair development tasks, and 113\text{ analysis tasks}} \) \$22,600	tasks, and 113 analysis tas	sks)		
9	B. Budget Activity Justification This program is in budget activity 7 - Operational System Development, Research Category 6.6 because all efforts support fielded systems.	1 Category 6.6 because all	efforts support fie	lded systems.	
<u>(3</u>	C. Program Change Summary (\$ in Thousands)	FY 1999	FY 2000	FY 2001	Total Cost
99	Previous President's Budget (FY 2000 PBR) Appropriated Value	96,589	160,212 160,212	168,410	TBD
<u>e</u>	Adjustments to Appropriated Value a. Congressional/General Reductions	-206	-15		
	b. Small Business Innovative Researchc. Omnibus or Other Above Threshold Reprogram	-3,229	-870		
	d. Below Threshold Reprogram e. Rescissions	90 <i>5</i> -796	866-		
99	f. Other Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR	93,338	158,329	-1,484 166,926	TBD
_	Project 671012	f 5 Pages		Exhibit R-2 (PE 0207268F)	: 0207268F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ION SHEET (I	R-2 Exhil	bit)	ď	DATE February 2000	2000
80DC 07 -	BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0207268F Aircra Program (CIP)	ND TITLE Aircraft I	∃ngine Co	mponent l	PE NUMBER AND TITLE 0207268F Aircraft Engine Component Improvement Program (CIP)	РРОЈЕСТ 671012
(c)	C. Program Change Summary (\$ in Thousands) Continued					:	
9	Significant Program Changes: FY 2000 increase in test hour cost is due to a greater number of engine test hours being performed in altitude facilities. FY 2001 President's Budget Request reflects \$1,484K downward adjustment for inflation.	r of engine test hours tment for inflation.	being perforn	ned in altitude	facilities.		
<u> </u>	D. Other Program Funding Summary (\$ in Thousands) FY 1999 FY 2000 FY 2001 Actual Estimate Estimate	01 EY 2002. ate Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
99	y/Navy Aircraft Eng /Navy Aircraft Eng	Rs for prior years	owing years				
()	E. Acquisition Strategy Contracts within this Program Element are awarded sole source to engine manufacturers. CIP tasks are generally assigned to original engine manufacturers. Tasks are assigned based on available funding and prioritization of candidate tasks.	ne manufacturers. CI:	P tasks are ger	nerally assigne	ed to original e	ngine manufacturer	s. Tasks are
9	E. Schedule Profile	EY 1999 1 2 3	4	EY 2000 1 2 3	000 3 4	EY 2001	901 3 4
5	Not applicable. CIP is a level of effort program that funds 700+ separate engineering tasks per year.	te engineering tasks p	oer year.				
ď	Project 671012	Page 3 of 5 Pages	:			Exhibit R-2 (PE 0207268F)	: 0207268F)

	RDT&E PROGRAM ELEMENT	RAM ELE	MENT/PR	I/PROJECT CO	OST BR	COST BREAKDOWN (R-3)	VN (R-3)		DATE F	February 2000	000
07	вирсет Астилтү 07 - Operational System Development	Jevelopmer	ıt		PE NUMBER AND TIT 0207268F Airc Program (CIP)	PE NUMBER AND TITLE 0207268F Aircraft Engine Component Improvement Program (CIP)	t Engine (Somponer	nt Improv	vement	РРОЈЕСТ 671012
(£)	A. Project Cost Breakdown (\$ in Thousands)	(\$ in Thousand	(য				FV 1000	000	FV 2000	9	EV 2001
5							80,215	215	121,438	3 & S	130,810
99	AFFTC Flight Tests AEDC Altitude Tests						8 .5	886 5.716	192 24.109	5 50 06 35	1,700 20.900
333	· · · · · · ·						3,328 3,193 93,338	3,328 3,193 3,338	10,000 2,590 158,329	29 29 29	12,016 1,500 166,926
3	B. Budget Acquisition History and Planning Information (\$ in Thousands)	ry and Plannin	gInformation	(\$ in Thousand	ଜ						
3	Performing Organizations:										
	Contractor or	Contract Method/Tyme	A ward or	Performing	Project						
	Performing		Obligation	Activity	Office	Total Prior	Budget	Budget	Budget	Budget to	Total
	Activity	Vehicle	Date	EAC	EAC	to FY 1999	FY 1999	EY 2000	FY 2001	Complete	Program
	Product Development Organizations	zations									
	GE-Evandale, OH	CPAF	Jan 98	N/A	N/A		43,767	65,016	51,710	Continuing	
	Pratt & Whitney	CPAF	Jan 98	N/A	N/A		28,191	45,180	72,350	Continuing	
	GE-Lynn, MA	CPFF	Jan 98	N/A	N/A		4,129	4,825	2,900	Continuing	
	Allison	CPFF	Jan 98	N/A	N/A		949	006	1,400	Continuing	
	Teledyne	CPFF	Jan 98	V/A	N/A		1,979	4,061	1,200	Continuing	
	Allied Signal	CPFF	Jan 98	N/A A/A	K/Z/		200	979	250	Continuing	UBI Cat
	Sundstrand	CPFF	Jan 98	N/N	Y A		495	202	200	Continuing	
	Support and Management Organizations	anizations		I I I			!			0	
	In House Support						3,193	2,590	1,500	Continuing	TBD
	Petroleum/Oil/						3,328	10,000	12,016	Continuing	TBD
	Lubricants										
	Project 671012			Page	Page 4 of 5 Pages	Š			Exhib	Exhibit R-3 (PE 0207268F))207268F)
-	100000			0, 1	0 1 0 1 0 1 0	2			-: 27		150: 500:

	RDT&E PROGRAM ELEMENT/PROJECT CO	COST BREAKDOWN (R-3)	VN (R-3)		DATE Fe	February 2000	8
80E 07	вирсет Астімту 07 - Operational System Development	PE NUMBER AND TITLE 0207268F Aircraft Engine Component Improvement Program (CIP)	t Engine C	omponer	nt Improv		РКОЈЕСТ 671012
(n)	Performing Organizations Continued:						
	AFFTC-Edwards AFB, CA		988	192	1,700	Continuing	TBD
	AEDC-Amold AFB, TN	Total Deios	5,716	24,109 Dudget		Continuing	TBD
	Subtotals	to FY 1999	EX 1999	EY 2000	FY 2001	Complete	Program
	Subtotal Product Development		80,215	121,438	130,810	TBD	TBD
	Subtotal Support and Management Subtotal Test and Evaluation		6,521	12,590	13,516	TBD	TBD
	Total Project		93,338	158,329	166,926	TBD	TBD
	Footnote: Total prior to FY 1999 is not reflected above because the program was funded in procurement through FY 1979. RDT&E funding began in FY 1980.	was funded in procurement	t through FY	1979. RDT&	E funding be _l	gan in FY 19.	80.
4	Project 671012	Page 5 of 5 Pages			Exhibit	Exhibit R-3 (PE 0207268F)	07268F)

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	USTIFIC	ATION	SHEET	(R-2 Ex	(hibit)		DATE	Februa	February 2000
800G 07 -	вирсет астилту 07 - Operational System Development			PE NUMBER AN 0207320F	PE NUMBER AND TITLE 0207320F Senso	⊌D TITLE Sensor Fuzed Weapon (SFW)	Weapon	(SFW)		РРОЈЕСТ 671016
:	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
671016	6 Sensor Fuzed Weapon	7,782	11,645	0	0	0	0	0	0	64,739
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	8
(£)	A. Mission Description This project continues development of the Sensor Fuzed Weapon (SFW) Pre-Planned Product Improvement (P3I). The P3I improvements to the baseline SFW will enhance weapon performance against primary targets (land combat vehicles), targets with countermeasures, and potentially allow for use against alternative targets. All P3I improvements are at the BLU-108 submunition level. The P3I BLU-108 submunition will also be used in the anti-armor version of the Joint Standoff Weapon (JSOW). SFW is an ACAT 2 program.	ized Weapon s (land combi level. The P	(SFW) Pre- nt vehicles), 31 BLU-108	Planned Protargets with submunition	duct Improv countermea n will also b	ement (P3I), sures, and p	The P3I in otentially al	nprovements low for use a version of th	s to the baseli against altern ne Joint Stan	ine SFW will ative targets. All doff Weapon
2333	FY 1999 (\$\subseteq \text{in Thousands}) \$7,521 Continued the P3I development program with contractor test and evaluation \$261 Continued program management support, includes travel, program office support, 27,782 Total		ith contract ncludes trav	or test and ev /el, program	valuation office suppl	ies and equi	pment, train	ing and tech	nical enginee	orogram with contractor test and evaluation supplies and equipment, training and technical engineering support
99	FY 2000 (\$ in Thousands) \$9,014 Complete the P3I development program; correct technical problems; complete contractor development testing; and support govt. qualification	nt program; c	orrect techni	ical problem	s; complete	contractor d	evelopment	testing; and	support govt	. qualification
<u> </u>	\$1,107 Continue program management support, includes travel, program office supplies and equipment, training and technical engineering support \$1,524 Conduct and complete subsystem level testing and Cluster Bomb Unit (CBU) flight testing Total	nt support, in tem level test	cludes trave ing and Clu	el, program o ester Bomb U	ffice supplic Init (CBU) f	es and equipi light testing	ment, trainii	ng and techn	ical engineer	ing support
933	FY 2001 (\$ in Thousands) \$0 No Activity \$0 Total									
E	B. Budget Activity Justification This program is in budget activity 7 - Operational System Development, because this activity funds improvements to the SFW, which is currently in production. The SFW P3I is scheduled to cut-in the production program in FY01.	stem Develo am in FY01.	pment, beca	use this activ	vity funds in	aprovements	to the SFW	/, which is c	urrently in pr	oduction. The
P	Project 671016		Page	Page 1 of 5 Pages	10			Ш	xhibit R-2 (Exhibit R-2 (PE 0207320F)

	RDT&E BUDGET ITEM JU	T ITEM		ICATION	STIFICATION SHEET (R-2 Exhibit)	(R-2 Exhi	bit)		DATE February 2000	7 2000
BUC 07	вирсет астилту 07 - Operational System Development	pment			PE NUMBER AND TITLE 0207320F Senso		л тп∟Е Sensor Fuzed Weapon (SFW)	pon (SFV		PROJECT 671016
<u>(3</u>	C. Program Change Summary (\$ in Thousands)	Thousand	ন্ত			0001 1821	OOO XXX	Ĭ		E
9	Previous President's Budget (FY 2000 PBR)	PBR)				7,504	FY 2000 11,785		107 X 300 0	<u>Total Cost</u> 64,601
9	Appropriated Value					7,551	11,785			
9										
	a. Congressional/General Reductions					-26	-2			
	b. Small Business Innovative Research	ر ب	,			-127		_		
	c. Omnibus or Other Above Inteshold Reprogram d. Below Threshold Reprogram	ı Keprograı	£			440	4	-		
	e. Rescissions					-65	-74	_		
99	f. Other Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR	Y 2000 PB]	œ.			7,782	11,645		0	64,739
9	Significant Program Changes: None									
9	D. Other Program Funding Sum	nary (\$ in The FY 1999	ousands) FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to	Total Cost
1	A E BDT & E	Actual	<u>Estimate</u>	Estimate	Estimate	Estimate	<u>Estimate</u>	Estimate	Complete	
333	AF KD 1 & E Other APPN Procurement of Ammunition, AF P-1 Line Item 21	117,955	85,385	107,201	103,874	98,965	97,402	98,189	243,200	1,757,534
<u>(</u> 2)	E. Acquisition Strategy The SFW Pre-Planned Product Improvements (P31) program is a 58 month R&D effort to enhance the BLU-108 submunition and projectile. This is a sole source Cost-Plus Award Fee (CPAF) contract for P3I to the current SFW submunition design. The SFW P3I submunition (improved BLU-108) will also be used in the JSOW weapon system.	ements (P3) for P3I to t	l) program is he current SI	s a 58 month R FW submunitie	&D effort to e on design. The	nhance the BL SFW P3I subi	U-108 submun munition (impi	ution and proj oved BLU-1(ectile. This is a so)8) will also be use	le source d in the JSOW
9	F. Schedule Profile				FY 1999		FY 2000	9	FY	FY 2001
ц.	Project 671016			Pag	Page 2 of 5 Pages				Exhibit R-2 (PE 0207320F)	E 0207320F)

L	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SHEET (R-	2 Exh	ibit)			DATE		February 2000	8
8UD 07	вирсет аститту 07 - Operational System Development	PE NUMBER AND TITLE 0207320F Sense	וס דודרם Sensor Fuzed Weapon (SFW)	Fuzed	Wea	S) uod	FW)			РРОЈЕСТ 671016
(c)	F. Schedule Profile Continued	FY 1999	-	-	FY 2000))		-	EY 2001	
5555555	Design and Development of P31 Preliminary Design Review (PDR) Detailed Design/Development Tests Development Test Meeting Critical Design Review (CDR) Hardware Build/Qualification Tests Subsystem Level Testing System Level Testing * = Completed Events X = Planned Events		4 * *	- * *	~ × ×××	~ ×××	4 ××	- ×	2	- - -
ц.	Project 671016	Page 3 of 5 Pages						Exhibit I	Exhibit R-2 (PE 0207320F)	07320F

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	RDT&F PROGRAM FI EMENT	RAM FIF		/PRO IECT COST BREAKDOWN (R-3)	OST RE	SEAKDOV	WN (R-3)		DATE	0000000	5
	702-115-02-									rebinary zoou	3
97 07	BUDGET ACTIVITY 07 - Operational System Development	Developme	nt		PE NUMBER AI 0207320F		ND TITLE Sensor Fuzed Weapon (SFW)	eapon (SF	-W)	9	РРОЈЕСТ 671016
()	A. Project Cost Breakdown (\$ in Thousands)	(\$ in Thousan	ds)				0001 753	000	OOOC AS	c	EV 2001
9							7,5	7,521	9,014	≳! ↔	0
99	Support Contracts Program Office Support							147 114	286	· ·	
33							7,7	0 7,782	1,524	4 S	0
3	B. Budget Acquisition History and Planning Information (\$ in Thousands)	ry and Plannin	g Informatic	on (\$ in Thousang	(SI						
9	Performing Organizations:										
	Contractor or Government	Contract Method/Type	Award or	Performing	Project						
	Performing Activity	or Funding	Obligation Date	Activity	Office FAC	Total Prior	Budget FV 1999	Budget FV 2000	Budget FV 2001	Budget to	Total
	Product Development Organizations	zations						7007	1007		margar 7
	Textron System Defense	SS/CPAF	Oct 99	51,891	51,891	35,356	7,521	9,014	0	0	51,891
	Support and Management Organizations	ganizations									
	ASC/YH	N/A	various	N/A	N/A	1,903	48	46	0	0	1,997
	Miscellaneous	various	various	N/A	N/A	1,161	213	1,061	0	0	2,435
	Test and Evaluation Organizations 46 OG/OGML	<u>itions</u> REO	Mar 00	N/A	N/A	6,703	0	1,524	0	0	8,227
9	Government Furnished Property:	perty:									
		Contract Method/Type	Award or								
	<u>Item</u> Description	or Funding Vehicle	Obligation Date	<u>Delivery</u> Date		Total Prior	Budget FV 1999	Budget FV 2000	Budget FV 2001	Budget to	Total Program
	TOUR THOU					W 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	77711	7 7 7000	1007	and the second	1081911
	Project 671016			Pag	Page 4 of 5 Pages	Ses			Exhibi	Exhibit R-3 (PE 0207320F))7320F)

FNHMH IH MV BOOGE HET FINENT	AMEIE	MENT/P	PO IECT	(8-3)	WN (P.3)		DATE	000000000000000000000000000000000000000	
ויסואביושר		INIEN //	NOOLO	COSI BILLANDO	(0-11)		Le	repruary zooo	2
BUDGET ACTIVITY 07 - Operational System Development	velopme	nt		PE NUMBER AND TITLE 0207320F Senso	r Fuzed W	ਮਹਾਸਸ਼ Sensor Fuzed Weapon (SFW)	-W)	9	РРОЈЕСТ 671016
(U) Government Furnished Property Continued:	ty Continue	ļ.		i					
୍ଧୀ:	Contract								
	Method/Type	Award or							
Item or Description Ve	<u>or Funding</u> Vehicle	<u>Obligation</u> Date	<u>Delivery</u> Date	Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	<u>Total</u> Program
Product Development Property								•	
GFE (explosive) MI	MIPR	May 97	Oct 97	72	0	0	0	0	72
Army, Aberdeen									
A Plates) Army,	MIPR	96 unf	Jul 96	117	0	0	0	0	117
Aberdeen									
Support and Management Property	≱								
Not Applicable N/A	Ą	N/A	N/A	0	0	0	0	0	0
Test and Evaluation Property									
Not Applicable N/A	Ą	N/A	N/A	0	0	0	0	0	0
				Total Prior	Budget	Budget	Budget	Budget to	Total
Subtotals				to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
Subtotal Product Development				35 545	7 521	9 014	C	<u> </u>	52.080
Collect Comment of Manager	•			470.0	120,	1,01	· c		2,000
Subtotal Support and Management	ıt			3,064	107	1,10/)	o ·	4,432
Subtotal Test and Evaluation				6,703	0	1,524	0	0	8,227
Total Project				45,312	7,782	11,645	0	0	64,739
								,	
Project 671016			P	Page 5 of 5 Pages		:	Exhibi	Exhibit R-3 (PE 0207320F)	7320F)

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	RDT&E	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	JSTIFIC,	ATION (SHEET	(R-2 Ex	:hibit)		DATE	Februa	February 2000
BUDGE 07 - (вирсет Астипт∕ 07 - Operational Syst	вирсет Астилт∨ 07 - Operational System Development			PE NUMBER AND TITLE 0207325F Joint (JASSM)	F Joint	Air-to-Su	rface Sta	PE NUMBER AND TITLE 0207325F Joint Air-to-Surface Standoff Missile (JASSM)	issile	PROJECT 674515
	COST (\$ in °	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
674515		Joint Air-to-Surface Standoff Missile (JASSM)	121,146	164,425	120,281	68,795	37,188	9,135	5,988	0	879,051
	Quantity of RDT&E Articles	rticles	61	0	21	0	0	0	0	0	82
(a)	A. Mission Description JASSM is a joint Air For air-to-surface, autonomo Initial integration efforts descriptive summary ref	rce/Navy program with the A us, precision guided, standof are for the B-52H and F-16 (lects Air Force funding only.	ir Force as the force for the formise missi Block 50).	ie lead servi. ile compatib Objective air	ce. This is a le with fight reraft include	in ACAT II. er and bom! e the B-1, B) program to ber aircraft a -2, F-15E, F	provide an ible to attack	ir Force as the lead service. This is an ACAT ID program to provide an affordable long range, conventional f cruise missile compatible with fighter and bomber aircraft able to attack a variety of fixed or relocatable tar (Block 50). Objective aircraft include the B-1, B-2, F-15E, F-16 (Block 40), F-117, and F/A-18E/F. This	ong range, co f fixed or rele nd F/A-18E	orventional ocatable targets. ?/F. This
<u> </u>	EY 1999 (\$ in Thousands) \$96,723 Init \$11,188 Cor \$5,255 Cor \$1,350 Cor \$5,170 Cor \$1,460 Cor	Initiated Engineering and Manufacturing Development (EMD). Continued flight test support, test aircraft modifications, live fire test support, target construction/rehab. Continued aircraft integration. Continued mission planning and intelligence systems integration. Continued program office support. Continued mission support.	ufacturing Dest aircraft mest aircraft mest aircraft mest aircraft mest aircraft cort.	evelopment nodifications e systems in	(EMD). ,, live fire tes tegration.	st support, t	arget constru	ction/rehab			
55555555	FY 2000 (\$ in Thousands) \$120,857 Cor \$19,004 Cor \$14,846 Cor \$2,120 Cor \$321 Init \$6,396 Cor \$881 Cor	ontinue EMD. Continue EMD. Continue flight test support, test aircraft modifications, live fire test support, target construction/rehab. Continue aircraft integration. Continue mission planning and intelligence systems integration. Initiate manufacturing support. Continue program office support. Continue mission support.	st aircraft mc intelligence ort	t aircraft modifications, live fire intelligence systems integration. rt .	live fire test egration.	support, taı	rget construc	tion/rehab.			
Pro	Project 674515			Page	Page 1 of 6 Pages				Ш	xhibit R-2 (Exhibit R-2 (PE 0207325F)
					1123						

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	HEET (R	-2 Exhibit	(;	DATE February 2000	y 2000
80DK	вирсет Астилтү 07 - Operational System Development 03 (J	PE NUMBER AND TITLE 0207325F Joint (JASSM)	отпе Joint Air-to	-Surface Sta	PE NUMBER AND TITLE 0207325F Joint Air-to-Surface Standoff Missile (JASSM)	PROJECT 674515
(£)	A. Mission Description Continued					
55555555	FY 2001 (\$ in Thousands) \$68,087 Continue EMD. \$34,889 Continue flight test support, test aircraft modifications, live fire test support, target construction/rehab. \$6,581 Continue aircraft integration. \$2,809 Continue mission planning and intelligence systems integration. \$323 Continue manufacturing support. \$6,606 Continue program office support. \$6,606 Continue mission support. \$120,281 Total	ve fire test supration.	port, target con	struction/rehab.		
<u>6</u>	B. Budget Activity Justification This program is reflected in Budget Activity 7, Operational System Development, because production funds have been included in the DoD budget submission to begin Low Rate Initial Production (LRIP).	ıt, because pro	oduction funds ł	nave been include	d in the DoD budget sub	mission to begin
3	C. Program Change Summary (\$ in Thousands)	,				,
566	Previous President's Budget (FY 2000 PBR) Appropriated Value Adjustments to Appropriated Value	~ ·- .	F <u>Y 1999</u> 128,796 129,870	<u>FY 2000</u> 166,408 166,408	FX 2001 71,022	<u>Total Cost</u> 808,230
<u> </u>	a. Congressional/General Reductions b. Small Business Innovative Research c. Omnibus or Other Above Threshold Reprogram d. Below Threshold Reprogram e. Rescissions		-707 -2,957 -4,015 -1,045	-43 -903 -1,037		
99	f. Other Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR	7	121,146	164,425	49,259 120,281	70,821 879,051
Œ	Project 674515	Page 2 of 6 Pages			Exhibit R-2 (F	Exhibit R-2 (PE 0207325F)

	RDT&E BUDGET ITEM JUSTIFI	STIFICATION SHEET (R-2 Exhibit)	EET (R-2	Exhib	it)	/ <u>(</u>	DATE February 2000	2000
07 -	вирсет астіvіту 07 - Operational System Development	PE N 020 (JA	PE NUMBER AND TITLE 0207325F Joint Air-to-Surface Standoff Missile (JASSM)	πιε oint Air-	to-Surfac	e Standof	f Missile	PROJECT 674515
(£)	C. Program Change Summary (\$ in Thousands) Continued							
<u>(</u>	Significant Program Changes: FY01-02 funding adjustment reflects the JASSM program restructure. Restructure funds transferred from JASSM FY01 procurement fund.	icture. Restructure	funds transfer	rred from J	JASSM FY0)	l procurement	fund.	
	Schedule: EMD schedule extended ten months. Restructure due to late subcontractor hardware deliveries.	e to late subcontrac	ctor hardware	deliveries.				
	Technical: None.							
9	D. Other Program Funding Summary (\$ in Thousands) FY 1999 FY 2000 Actual Estimate	EY 2001 EY C	FY 2002 FY Estimate Fst	FY 2003 Estimate	FY 2004 Fstimate	FY 2005 Estimate	Cost to	Total Cost
53								
(3)	Missile Procurement (AF)	0 42	42,922 50	50,476	101,761	145,417	868,852	1,209,428
9	SEEK EAGLE	0	744	2,896	3,607	2,882	0	10,129
ව	E. Acquisition Strategy All major contracts within this Program Element were awarded through full and open competition. The EMD phase option for JASSM is Cost Plus Award Fee (CPAF). This contract type provides the government the flexibility to periodically evaluate contractor performance while motivating the contractor to execute a successful program with emphasis on cost, average unit procurement price (AUPP), schedule, and performance.	rrough full and ope odically evaluate c AUPP), schedule,	en competitior ontractor perf and performar	n. The EM ormance w nce.	D phase opti hile motivati	on for JASSM ng the contrac	l is Cost Plus Awar tor to execute a suc	d Fee (CPAF). :cessful
	JASSM is an OSD flagship program under Cost as An Independent Variable (CAIV). This allows the contractor to have maximum trade space to develop an affordable missile that meets the three key performance parameters. Under CAIV, the program maintains a threshold AUPP of \$700,000 (BY95\$) and an objective AUPP of \$400,000 (BY95\$).	ent Variable (CAIV) CAIV, the progran	/). This allow n maintains a t	s the contr threshold /	actor to have AUPP of \$70	maximum tra 0,000 (BY95\$	de space to develop) and an objective /	o an affordable AUPP of
	The government is buying the JASSM system based on a contractor-developed, government-approved System Performance Specification (SPS) which became contractually binding at downselect. The contractor assumes Total System Performance Responsibility (TSPR) as defined in the SPS and warrants system performance for 15 years. Accordingly, the contractor is responsible not only for the design of the missile system, but also for planning and executing the Development Test and Evaluation (DT&E) program to verify the missile system performance. In its role as facilitator and advisor to the contractor, the government formally arranges and funds	tor-developed, goval System Perform for the design of that the design of that the design of that the form	/ernment-appr nance Respons ne missile syst s facilitator an	oved Syste ibility (TS: em, but als	em Performar PR) as define so for plannir to the contrac	nce Specification in the SPS of and execution and execution atternation, the gover	a contractor-developed, government-approved System Performance Specification (SPS) which became umes Total System Performance Responsibility (TSPR) as defined in the SPS and warrants system performa not only for the design of the missile system, but also for planning and executing the Development Test and n performance. In its role as facilitator and advisor to the contractor, the government formally arranges and	came 1 performance it Test and anges and funds
Ω.	Project 674515	Page 3 of 6 Pages	6 Pages				Exhibit R-2 (PE 0207325F)	= 0207325F)

	RDT&E BUDGET ITEM JUSTIFICATION	USTIFICATION SHEET (R-2 Exhibit) DATE February 2000	, 2000
97i	вирсет астипт 07 - Operational System Development	PENUMBER AND TITLE 0207325F Joint Air-to-Surface Standoff Missile (JASSM)	PROJECT 674515
(D)	E. Acquisition Strategy Continued the state of the state of the second of the negotian the use of government flight test support funds are part of the negotian contractor and the government ensuring the contractor is able to execute the DT&E program according to the scope of the EMD contractor.	Although funded by the government, flight test support funds are part of the negotiated commitment between the r is able to execute the DT&E program according to the scope of the EMD contract.	between the
9	F. Schedule Profile	EX 1999 EX 2000 EX 2	FY 2001
2555555	Milestone II Approval EMD Contract Award First Flight Test Vehicle Prototype Flight First DT/OT Flight LRIP Decision - 1st Qtr FY 2002 Last DT/OT Flight - 2nd Qtr FY 2002 LRIP Contract Award - 1st Qtr FY 2002 Begin IOT&E Flight Testing (AFOTEC) - 3rd Qtr FY 2002 * = Completed Event X = Planned Event	*	
	Project 674515	Page 4 of 6 Pages	E 0207325F)

	RDT&E PROGRAM ELEMENT	SAM ELE	MENT/PF	/PROJECT C	OST BE	COST BREAKDOWN (R-3)	WN (R-3)		DATE Fe	February 2000	8
20	вирсет Астилту 07 - Operational System Development	evelopme	nt		PE NUMBER AN 0207325F (JASSM)	PE NUMBER AND TITLE 0207325F Joint A (JASSM)	\ir-to-Surf	ыр пт.е Joint Air-to-Surface Standoff Missile	off Missil		РРОЈЕСТ 674515
9	A. Project Cost Breakdown (\$ in Thousands)	S in Thousand	(Sp				0001 753	000	00C AH		100C VII
9	Major Contracts						96,723	23 23	FY 2000 120,857)	68,087
99	Associated Contracts Support Contracts						, v	5,255 6,520	14,846 8,837		6,581 9,738
999	In-House Test Support Total						1,460 11,188 121,146	1,460 11,188 21,146	881 19,004 164,425		986 34,889 120,281
3	B. Budget Acquisition History and Planning Information (\$ in Thousands)	y and Plannin	g Information	(S in Thousand	গ্র						
3	Performing Organizations:										
	Contractor or Government	Contract Method/Type	Award or	Performing	Project						
		or Funding	Obligation	Activity	Office	Total Prior	Budget	Budget	Budget	Budget to	Total
	Activity	Vehicle	Date	EAC	EAC	to FY 1999	EY 1999	FY 2000	FY 2001	Complete	Program
	MDA - PDRR I C/CPF	auons C/CPFF	96 unf	120,439	120,439	120,439	0	0	0	0	120,439
	LM - PDRR I& II	C/CPFF	Jun 96	153,382	153,382	153,382	0	0	0	0	153,382
	_	C/CPAF	Nov 98	340,375	340,375	6,971	96,723	120,857	68,087	47,737	340,375
	NOTE: Contractors are MDA										
	- McDonnell Douglas										
	Aircrait; Livi - Lockneed Martin										
	Support and Management Organizations	nizations									
	F-16 SPO P	PO	Apr 96	N/A	N/A	6,045	3,716	7,869	3,310	11,728	32,668
	B-52 SPO F	PO	Sep 96	N/A	N/A	17,658	1,539	6,915	3,234	1,070	30,416
	eg	PO	Various	N/A	N/A	3,462	0	62	37	0	3,561
	Sverdrup Inc.	C/CPAF	Jan 96	N/A	N/A	7,318	2,068	3,651	3,765	3,771	20,573
	Navy	MIPR	Jan 96	N/A	N/A	2,311	0	0	0	0	2,311
α.	Project 674515			Pag	Page 5 of 6 Pages	SS			Exhibit	Exhibit R-3 (PE 0207325F)	07325F)

	RDT&E PROGRAM ELEMENT		/PROJECT C	OST BI	COST BREAKDOWN (R-3)	VN (R-3)		DATE Fe	February 2000	00
20	вирсет астилту 07 - Operational System Development	nt		PE NUMBER 0207325I (JASSM)	PE NUMBER AND TITLE 0207325F Joint Air-to-Surface Standoff Missile (JASSM)	ir-to-Surf	ace Stand	loff Missil		РРОЈЕСТ 674515
(D)	Performing Organizations Continued: Support and Management Organizations JASSM SPO/Other Test and Evaluation Organizations AGTW	Various Ian 96	N/A A/N	N/A	15,112	5,912	6,067	6,959	17,800	51,850
3	Government Furnished Prop Item Description Product Development Property	or ion	Delivery <u>Date</u>		Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total. Program
	Not Applicable Support and Management Property Not Applicable Test and Evaluation Property Not Applicable Subtotals Subtotal Product Development Subtotal Test and Evaluation Total Project		·		Total Prior to FY 1999 280,792 51,906 19,395 352,093	Budget EY 1999 96,723 13,235 11,188	Budget EX 2000 120,857 24,564 19,004 164,425	Budget EY 2001 68,087 17,305 34,889	Budget to Complete 47,737 34,369 39,000	Total Program 614,196 141,379 123,476 879,051
	Project 674515		Pag	Page 6 of 6 Pages	SS			Exhibi	Exhibit R-3 (PE 0207325F)	07325F)

	RDT&E BUDGET ITEM JU	_	ATION	STIFICATION SHEET (R-2 Exhibit)	(R-2 Ex	hibit)		DATE	February 2000	ry 2000
8UD 07	вирсет астилту 07 - Operational System Development			PE NUMBEF 0207412	PE NUMBER AND TITLE 0207412F Theat	PE NUMBER AND TITLE 0207412F Theater Air Control Systems	ntrol Sys	stems		PROJECT 67485L
	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
67485L	5L Theater Air Control System Imp (TACSI)	402	6,432	19,873	27,206	27,185	30,440	48,455	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0
(ව)	A. Mission Description Grad System (GTACS): GTACS provides battle management resources and a Command and Control (C2) air operations picture through which the Expeditionary Aerospace Forces Joint Forces Air Component Commander and theater level commanders control assigned forces accomplishing assigned. GTACS elements execute battle management, force allocation, control of airborne assets (counter air, aerial refueling, interdiction, close air support, reconnaissance, airlift, special operations missions and others), surveillance, early warning, identification, and theater missile defense. The GTACS mission is to deploy a rapid reaction, self-sustaining if necessary, radardata link capability into a deployed theater of operations. This support is support is support, reconnaissance, airlift, special operations other than war and peacetime contingencies, to projecting decisive force into a major regional conflict to support a strategic war. GTACS consists of a family of fradar/communication/electronics components irregively designed in the 1970/80s and is becoming logistically unsupportable. Without modernizing, of a family of fradar/communication/electronics components irregively designed in the 1970/80s and is becoming logistically unsupportable. Without modernizing of ACS will be unable to provide an accurate and reliable integrated air picture or conduct C2 theater operations in the future. Specifically, these upgrades will provide an open Defense Information Infrastructure Common Operating Environment (DI-COE) compliant architecture, reduce a large forward deploymental and move a large part of aerospace battle execution activities to the rear. Theater Air defense (TAD) Missile Tracking System (MTS)(formerly referred to as Expert Missile Tracker (EMT)) will provide the Combart Air Forces (CAF) with tactical capability to detect, track, predict launch and impact points, and classify tactical languagement. Fully modernized RCCS will evolve into the stattle management by performing the following core competencies	ACS provides Component allocation, oc illance, early capability in tringencies, to onents large liable integra 1 Operating I ctivities to tf c	s battle man Commande ontrol of airl warning, id ito a deploy o projecting ly designed ited air pictu finvironmen in rear. The F) with tacti ill evolve in CC) require inse (JTMD CS will prov ir and equip et current an et GTACS pi	agement resc rr and theater borne assets (lentification, ed theater of r decisive for in the 1970// ure or conduc t (DII-COE) rater Air defe ical capabilit to the Battle ment for thee 7 ide minimal ment drawdo ad future mis, rogram provi	level comm (counter air, and theater in operations. ce into a ma 80s and is be t C2 theater compliant ai anse (TAD) I y to detect, t Control Sys uter battle ma hitcal Targe Iy manned rawns and par sion taskings des interope	Command a anders contraction aerial refuel missile defer missile defer jor regional occurrence operations in chitecture, r. Vissile Track predict tem. The B¢ anagement beting (TCT), emote controt tobsolescen simust be presentiality amo	and Control (rol assigned ling, interdic nse. The G t is provided conflict to sistically unstance a large king System to launch and CS is a theat by performin C2 Data Lib sensor cap toe, there is 3-positioned and numeroum	(C2) air oper forces accortion, close a TACS missi I to worldwi upport a straupportable. Specificallie forward different asset that g the follow hk Managen hability with an immediat to transition s elements of	Sprovides battle management resources and a Command and Control (C2) air operations picture through we Component Commander and theater level commanders control assigned forces accomplishing assigned missi location, control of airborne assets (counter air, aerial refueling, interdiction, close air support, reconnaissance apabelity into a deployed theater of operations. This support is provided to worldwide operations ranging from intense largely designed theater of operations. This support is provided to worldwide operations ranging from ments largely designed in the 1970/80s and is becoming logistically unsupportable. Without modernizing, able integrated air picture or conduct C2 theater operations in the future. Specifically, these upgrades will properating Environment (DIL-COE) compliant architecture, reduce a large forward deployment/airlift requirer tivities to the rear. Theater Air defense (TAD) Missile Tracking System (MTS)(formerly referred to as Experiores (CAF) with tactical capability to detect, track, predict launch and impact points, and classify tactical GTACS will evolve into the Battle Control System. The BCS is a theater asset that supports the Joint Force ander (JFACC) requirement for theater battle management by performing the following core competencies: dissile Defense (JTMD) and Time Critical Targeting (TCT), C2 Data Link Management, Surveillance, Combernized RCCs will provide minimally manned remote control sensor capability with increased reliability and on manpower and equipment drawdowns and part obsolescence, there is an immediate requirement to implen ACS to meet current and future mission taskings must be pre-positioned to transition into the next generation flware. The GTACS program provides interoperability among numerous elements of the CAF that encompa sets.	Sprovides battle management resources and a Command and Control (C2) air operations picture through which Component Commander and theater level commanders control assigned forces accomplishing assigned missions. Incation, control of airborne assets (counter air, aerial refueling, interdiction, close air support, reconnaissance, lance, early warning, identification, and theater missile defense. The TACS mission is to deploy a rapid apability into a deployed theater of operations. This support is provided to worldwide operations ranging from ingencies, to projecting decisive force into a major regional conflict to support a strategic war. GTACS consists nents largely designed in the 1970/80s and is becoming logistically unsupportable. Without modernizing, able integrated air picture or conduct C2 theater operations in the future. Specifically, these upgrades will provide Operating Environment (DII-COE) compliant architecture, reduce a large forward deployment/airlift requirement tivities to the rear. Theater Air defense (TAD) Missile Tracking System (MTS)(formerly referred to as Expert Forces (CAF) with tactical capability to detect, track, predict launch and impact points, and classify tactical GTACS will evolve into the Battle Control System. The BCS is a theater asset that supports the Joint Force ander (JFACC) requirement for theater battle management by performing the following core competencies: dissile Defense (JTMD) and Time Critical Targeting (TCT), C2 Data Link Management, Surveillance, Combat ernized RCCs will provide minimally manned remote control sensor capability with increased reliability and on manpower and equipment drawdowns and part obsolescence, there is an immediate requirement to implement ACS to meet current and future mission taskings must be pre-positioned to transition into the next generation of flware. The GTACS program provides interoperability among numerous elements of the CAF that encompass sets.
99	FY 1999 (\$ in Thousands) \$60 Developed/fielded interoperability upgrades to Modular Control Equipment (MCE) Pre-planned Product Improvement (P3I) systems	ility upgrade	ss to Module	ar Control Eq	luipment (M	CE) Pre-plaı	nned Produc	t Improvem	ent (P31) sys	tems

Page 1 of 5 Pages

Program support, test, and other miscellaneous efforts Total

Project 67485L

\$342 \$402

9999

Exhibit R-2 (PE 0207412F)

	RDT&E BUDGET ITEM JUSTIFIC	STIFICATION SHEET (R-2 Exhibit)	it)	DATE Februa l	February 2000
9 1	BUDGET ACTIVITY 17 - Operational System Development	PE NUMBER AND TITLE 0207412F Theater Air Control Systems	ir Control Sy	stems	PROJECT 67485L
<u>e</u>	A. Mission Description Continued				
55555	\$\frac{\text{FY 2000 (\mathbb{s} in Thousands)}}{\text{Concept Definition/Development for Evolutionary Upgrades to the GTACS System \$\frac{\text{\$\$240}}{\text{\$\$000}}\$ Continue program support (i.e. travel, supplies, miscellaneous) \$\frac{\text{\$\$\$6,000}}{\text{\$\$\$initiate Development of TAD MTS Upgrade for the Radar Sensors (includes TAD N \$\frac{\text{\$\$}\$6,432}{\text{\$\$\$}\$}}\$	nt for Evolutionary Upgrades to the GTACS System travel, supplies, miscellaneous) ITS Upgrade for the Radar Sensors (includes TAD MTS SPO Support)	TS SPO Support)		
99	FY 2001 (\$\sum \text{Thousands}) \$4,593 Program Office Support to include Systems Engineering Control. Travel. Supplies. Equipment and Miscellaneous	ide Systems Engineering (Operational Safety, Suitability, and Effectiveness), Advanced Planning, Program ment and Miscellaneous	lity, and Effective	ness), Advanced Plannin	g, Program
999	\$5,300 Continue development of TAD MTS Upgi \$9,980 Continue Development of Evolutionary U \$19,873 Total	Continue development of TAD MTS Upgrade for the Radar Sensors (Includes dedicated TAD MTS SPO Support) Continue Development of Evolutionary Upgrades to the GTACS (i.e. BCC/RCC Architecture) Total	ited TAD MTS SP hitecture)	O Support)	
3	B. Budget Activity Justification The program is in Budget Activity 7 because GTACS is a fielded	s a fielded, operational system. Program will begin major modifications/upgrades in FY00.	najor modificatior	1s/upgrades in FY00.	
3	C. Program Change Summary (\$ in Thousands)				
555	Previous President's Budget (FY 2000 PBR) Appropriated Value Adjustments to Appropriated Value	<u>FY 1999</u> 427 431	FY 2000 467 467	<u>FY 2001</u> 19,873	<u>Total Cost</u> TBD
	a. Congressional/General Reductions b. Small Business Innovative Research c. Omnibus or Other Above Threshold Reprogram d. Below Threshold Reprogram e. Rescissions	-3 -19 -3	-35		
99	Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR	402	6,000 6,432	19,873	TBD
	Project 67485L	Page 2 of 5 Pages		Exhibit R-2 (Exhibit R-2 (PE 0207412F)

	RDT&E BUDGET ITEM JU		TIFICATIO	ON SHEET	STIFICATION SHEET (R-2 Exhibit)	ibit)	Δ	DATE February 2000	ry 2000
910 010	вирсет астилту 07 - Operational System Development	nent		PE NUMBER AN 0207412F	PE NUMBER AND TITLE 0207412F Theater	ытт∟е Theater Air Control Systems	ol Systems		PROJECT 67485L
9	C. Program Change Summary (\$ in Thousands) Continued	ousands) Cont	inued						
9	Significant Program Changes;								
	FY2000 includes \$6.0M of Congressional Reprogramming from OPAF to RDT&E for TAD MTS. FY2001 funding increased to continue TAD MTS development and to begin modernization (BCC/RCC). Funding of Program Office Support shifts from Production (3080) to RDT&E (3600) in conjunction with development of evolutionary upgrades to BCC/RCC architecture.	al Reprogrammi nding of Progra itecture.	ng from OPAF ım Office Supp	to RDT&E for 1 ort shifts from P	FAD MTS. FY2 roduction (3080)	2001 funding ir) to RDT&E (3	ocreased to cor (600) in conju	ntinue TAD MTS nction with develo	development and opment of
9	D. Other Program Funding Summary (\$ in Thousands)	\$ in Thousands	୍ଦ						
· ·		99 FY 2000 ual Estimate	EX 2001 Estimate	Extimate	Extimate	FY 2004 Estimate	FX 2005 Estimate	Cost to Complete	Total Cost
9	Other APPN								
(3)	Other Procurement Air Force, 14,961 WSC 833040, Theater Air	61 15,040	2,048	5,092	18,189	20,078	24,934	Continuing	TBD
9	Other Procurement Air Force, 1,932 WSC 838010, Comm Electronic Mods	32 4,072	2 790	788	592				TBD
9	Other Procurement Air Force, 3,314 WSC 86190A, Initial Spares	14 1,521	1,260	1,065	421	385	88	Continuing	TBD
<u> </u>	E. Acquisition Strategy Primary emphasis on this program shifts in FY00 from sustainment to modernization. ESC is analyzing potential acquisition approaches which will enhance interoperability and reduce total ownership costs. The intent is to reduce risk through the use of Commercial-Off-The-Shelf /Government-Off-The-Shelf (COTS/GOTS) and non-developmental hardware items to the fullest extent possible via an evolutionary acquisition approach(es).	n FY00 from sur p costs. The inte the fullest exter	stainment to mo ent is to reduce it possible via a	odernization. ES risk through the n evolutionary a	C is analyzing p use of Commer cquisition appro	ootential acquis cial-Off-The-S ach(es).	iition approach shelf /Governr	nes which will enh nent-Off-The-She	nance slf (COTS/GOTS)
9	F. Schedule Profile								
5 5	GTACS - TAD MTS			FY 1999 1 2 3	δ/ι ω 4	1 2 3 x	3 4 X	1 2	FY 2001 2 3 4
9	GTACS Modernization - BCC/RCC * Denotes completed event x Denotes planned event							×	
Ф	Project 67485L			Page 3 of 5 Pages	Sc			Exhibit R-2 (F	Exhibit R-2 (PE 0207412F)

	RDT&E PROGRAM ELEMENT	LEMENT/PI	/PROJECT COST BREAKDOWN (R-3)	OST BE	EAKDOV	VN (R-3)	_	DATE	February 2000	5
2	VENTER A CTIVITY			ים או זיים דם	ר ידיד מיאל מחמניי יוא דמ)	101
01 01	- Operational System Development	nent		020741	0207412F Theater Air Control Systems	r Air Con	trol Syster	ns	. 9	67485L
<u>(2)</u>	A. Project Cost Breakdown (\$ in Thousands)	sands)				 50	EV 1000	000C A3	9	EV 2001
9		les to Modular Co	ntrol Equipment ((MCE) Pre-	olanned		09	7 7	3	L 1 4001
99		d miscellaneous) ns Engineering (O am Control, Trav	perational Safety. el, Supplies, Equi	, Suitability pment and	, and	,	342	240	01	4,593
99	Miscellaneous Concept Definition/Development for Evolutionary Upgrades to the GTACS Development of TAD MTS Upgrade for the Radar Sensors (includes dedicated TAD MTS SPO	lutionary Upgrade he Radar Sensors	ss to the GTACS (includes dedicat	ed TAD MI	S SPO			192 6,000)0	5,300
99	 Support) Development of Evolutionary Upgrades to GTACS (i.e. BCC/RCC Architecture) Total 	o GTACS (i.e. BC	C/RCC Architect	ture)		,	402	6,432	73	9,980
<u>e</u>	B. Budget Acquisition History and Planning Information (\$ in Thousands)	ning Information	ı (\$ in Thousand	(3)						
3	Performing Organizations: Contractor or									
		pe Award or Obligation	Performing Activity	Project Office	Total Prior	Budget	Budget	Budget	Budget to	Total
	velonment Organiz		EAC	EAC	to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
	Contractor TBD - TAD MTS TBD	3QFY00	N/A	N/A			6,000	5,300		11,300
	Contractor TBD -BCC/RCC TBD Various Contractors MCE P3I Various	2QFY01 Various	N/A N/A	N/A N/A		09		9,980	Continuing Continuing	TBD
	Support and Management Organizations Miscellaneous program	Vorions	N/A	\ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		242	070)	603
	etc.)					7	24			780
	Program Office Support - Various includes ITSP/Mitre, etc.	Various	N/A	N/A				4,593	Continuing	TBD
	Various - Concept Various definition/development for	Various	N/A	N/A			192			192
	Project 67485L		Pag	Page 4 of 5 Pages	es			Exhib	Exhibit R-3 (PE 0207412F))7412F)

	RDT&E PROG	RDT&E PROGRAM ELEMENT/P	ROJECT	/PROJECT COST BREAKDOWN (R-3)	\KDOW	/N (R-3)		DATE Fe	February 2000	8
20	вирсет астилту 07 - Operational System Development)evelopment		PE NUMBER AND TITLE 0207412F Theater Air Control Systems	^Δ ΣΙΤΓΕ Theater	Air Cont	rol Syster		9	PROJECT 67485L
9	Performing Organizations Continued: Support and Management Organizations evolutionary upgrades to GTACS Test and Evaluation Organizations GFP/GFE: None	ontinued; anizations ions None								
3	Government Furnished Proplems Item Description Product Development Property None Support and Management Prop None Test and Evaluation Property	Contract Method/Type Award or or Funding Obligation Vehicle Date X	<u>Delivery</u> <u>Date</u>	Tot Fo F	<u>Total Prior</u> to FY 1999	Budget EY 1999	Budget FY 2000	Budget EY 2001	Budget to Complete	<u>Total</u> Program
	None Subtotals Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	nent		Tot to F	Total Prior to FY 1999	Budget FY 1999 60 342 402	Budget EY 2000 6,000 432 6,432	Budget EX 2001 15,280 4,593 19,873	Budget to Complete TBD TBD TBD	Total Program TBD TBD TBD
۵.	Project 67485L		Ь	Page 5 of 5 Pages				Exhibi	Exhibit R-3 (PE 0207412F)	7412F)

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	RDT&E	RDT&E BUDGET ITEM JU	JSTIFIC	ATION	SHEET	JSTIFICATION SHEET (R-2 Exhibit)	thibit)		DATE	Februa	February 2000
BUDG 07 -	вирсет астилту 07 - Operational System Development	em Development			PE NUMBEF 0207414	PE NUMBER AND TITLE 0207414F COME	3AT INTE	TIGEN	PE NUMBER AND TITLE 0207414F COMBAT INTELLIGENCE SYSTEM	EM	PROJECT 674773
,	COST (\$ in Thousands)	housands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
674773	73 Combat Intelligence System (CIS)	ystem (CIS)	13,635	0	0	0	0	0	0	0	26,684
	Quantity of RDT&E Articles	ticles	0	0	0	0	0	0	0	0	0
Note:	: Starting in FY00 the RD A. Mission Description	Note: Starting in FY00 the RDT&E funding for CIS is transferred to PE 27438F under project 4790, TBMCS (U) A. Mission Description	ferred to PE	27438F unc	der project 4	790, TBMC	S.				
	Combat Intelligence Syprovide warfighters with intelligence information Battle Management Cordata to support Contings and provides indications network capable of intelligence.	Combat Intelligence System (CIS) is the Air Force's single, standard automated intelligence system optimizing both component and unit-level intelligence functions to provide warfighters with the most accurate and timely intelligence data available. CIS is the core capability for automating the receipt, correlation, and dissemination of intelligence and operational systems which support combat planning and execution. As the intelligence segment to Theater Battle Management Core Systems (TBMCS), it provides an automated capability at the component and unit levels to rapidly receive and process all-source intelligence data to support Contingency Theater Automated Planning System (CTAPS). CIS builds and maintains in-theater situational awareness during deployment to the theater and provides indications and warning support after arrival. CIS is electronically interoperable and compatible with other intelligence systems, providing an integrated network capable of intelligence support to decision makers, battle planners, and warfighters.	ingle, stands rintelligence and operations des an autom ning System rival. CIS is akers, battle	urd automate data availa l systems w lated capabi (CTAPS). (electronical planners, m	ed intelligenble. CIS is thick supporting at the colors builds a CIS build a CIS builds a CIS builds a CIS builds a CIS builds a CIS build a CI	ce system of the core cap: t combat pla mponent an ind maintain: able and cor ers, and war	otimizing bo ability for au mning and e: d unit levels s in-theater s inpatible with fighters.	th componel itomating the xecution. A storagidly resituational are situational are hother inteller.	nt and unit-le e receipt, coi s the intellig eceive and p wareness dui	evel intellige rrelation, and gence segmen process all-so ring deployn ems, providii	ingle, standard automated intelligence system optimizing both component and unit-level intelligence functions to intelligence data available. CIS is the core capability for automating the receipt, correlation, and dissemination of doperational systems which support combat planning and execution. As the intelligence segment to Theater les an automated capability at the component and unit levels to rapidly receive and process all-source intelligence ing System (CTAPS). CIS builds and maintains in-theater situational awareness during deployment to the theater ival. CIS is electronically interoperable and compatible with other intelligence systems, providing an integrated akers, battle planners, mission planners, and warfighters.
999999	EY 1999 (\$ in Thousands) \$8,814 Cor \$808 Cor \$1,307 Sys \$2,706 Exp \$13,635 Tot	dds) Continued TBMCS software version 1.0 development. Continued TBMCS v1.1 development. System engineering and support. Expeditionary Force Experiment Total	ersion 1.0 de opment. rt. nt	velopment.							
999	EY 2000 (\$ in Thousands) \$0 No \$0 Tot	<u>nds)</u> No further funding in this project. Further evolution of this functionality continues under PE 0207438F, project 4790, TBMCS. Total	ect. Further	evolution of	fthis functio	nality contir	nes under P	E 0207438F	, project 479	90, TBMCS.	
993	FY 2001 (\$ in Thousands) \$0 No \$0 Tot	<u>nds)</u> No further funding in this project. Further evolution of this functionality continues under PE 0207438F, project 4790, TBMCS. Total	ect. Further	evolution of	this functio	nality contir	nes under P	E 0207438F	; project 479	90, TBMCS.	
ā	Project 674773		:	Page	Page 1 of 5 Pages	S			Ш	Exhibit R-2 (Exhibit R-2 (PE 0207414F)
		· · · · · · · · · · · · · · · · · · ·									

	RDT&E BUDGET ITEM JU	JUSTIFICATIO	STIFICATION SHEET (R-2 Exhibit)	(R-2 Exh	lbit)		DATE February 2000	y 2000
97 04	вирсет астилту 07 - Operational System Development		PE NUMBER AND TITLE 0207414F COM	PE NUMBER AND TITLE 0207414F COMBAT INTELLIGENCE SYSTEM	TINTELLI	SENCE S	YSTEM	PROJECT 674773
5	B. Budget Activity Justification This program was in budget activity 5, Engineering and Manufacturing Development in FY98. In FY99, this program moved to budget activity 7, Operational Systems Development, because the TBMCS program is a post milestone III effort and because it incrementally upgrades and develops capabilities for currently operational systems.	g and Manufacturing I ost milestone III effort	Development in F and because it in	Y98. In FY99, crementally up	this program r grades and dev	noved to budį elops capabil	get activity 7, Oper ities for currently o	rational Systems operational
9	C. Program Change Summary (\$ in Thousands)			FV 1000	EV 2000		EV 2001	Total 7
9	Previous President's Budget (FY 2000 PBR)			9,635	L 1 200		7007	10141 5051
3	•			9,802				
9								
	 a. Congressional/General Reductions b. Small Business Innovative Research 			-16 <i>/</i> -273				
	c. Omnibus or Other Above Threshold Reprogram							
	d. Below Threshold Reprogram			4,349				
	e. Rescissions			9/-				
	f. Other							
<u>9</u> 9	Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR			13,635				26,684
<u>6</u>	Significant Program Changes: Starting in FY00 the RDT&E, AF funding for CIS will be transferred to PE 27438F under project 4790, TBMCS, where further evolution of TBM combat intelligence capability and interoperability will continue. CIS will be integrated with several other legacy systems in a single DII/COE compliant system and will be managed as a single project with the fielding of TBMCS 1.0 in FY00. In FY99, \$2.219M was added to support EFX'99 initiative where TBMCS (CIS portion) was the CORE	will be transferred to will be integrated with Y00. In FY99, \$2.21	PE 27438F under I several other leg	acy systems in support EFX's	TBMCS, where a single DII/Co	e further evol OE compliant ere TBMCS	be transferred to PE 27438F under project 4790, TBMCS, where further evolution of TBM combat intelligence ce integrated with several other legacy systems in a single DII/COE compliant system and will be managed as a . In FY99, \$2.219M was added to support EFX'99 initiative where TBMCS (CIS portion) was the CORE	nbat intelligence e managed as a the CORE
E		rsands)	the farmon in					
2	FY 1999 Actual	FY 2000 FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to	Total Cost
99	AF RDT&E Other APPN						•	
(9)	Other Procurement, AF, PE 12,826 0207414F, WSC 832010,	0 0	0	0	0	0	0	26,937
т.	Project 674773		Page 2 of 5 Pages				Exhibit R-2 (F	Exhibit R-2 (PE 0207414F)

	RDT&E BUDGET ITEM JU	GET ITE	M JUSTIF	CATION	STIFICATION SHEET (R-2 Exhibit)	R-2 Exhi	bit)	٥	DATE February 2000	y 2000
8UD 07	вирсет астічіту 07 - Operational System Development	velopment			PE NUMBER AND TITLE 0207414F COME	AND TITLE	PE NUMBER AND TITLE 0207414F COMBAT INTELLIGENCE SYSTEM	GENCE SI	(STEM	PROJECT 674773
<u> </u>	(U) D. Other Program Funding Summary (\$ in Thousands) FY 1999 FY 2000 Actual Estimate	mmary (\$ in T FY 1999 Actual	Thousands) FY 2000 Estimate	FY 2001 Estimate	EY 2002 Estimate	FY 2003 Estimate	EY 2004 Estimate	EY 2005 Estimate	Cost to Complete	Total Cost
(D)	Intel Data Handling System, CIS Portion Other Procurement, AF, PE 0207431F, WSC 832010, Intel Data Handling System,	2,858	4,650	0	0	0	0	0		
9	CIS Portion Other Procurement, PE 0207438F, WSC 832010, Intel Data Handling System	0	17,648	0	0	0	0	0		
	Note: The other program funds associated with PEs 0207414F and 0207431F in FY99 and with PE 0207438F in FY00 to FY05 are reported both here and as other program funds under the descriptive summary for PE 0207438F, Theater Battle Management C4I, project 4790, TBMCS. However, only the Intel Data Handling System portion of procurement funds from PE 0207438F is shown here.	ssociated with ive summary find PE 0207438	PEs 0207414) or PE 0207438 F is shown her	F and 0207431] F, Theater Bat e.	F in FY99 and tle Managemer	with PE 0207 nt C4I, project	438F in FY00 4790, TBMC\$	to FY05 are r S. However, c	eported both here and yily the Intel	and as other Handling System
<u> </u>	E. Acquisition Strategy Electronic Systems Center (ESC), Hanscom AFB, MA manages the TBMCS program, including CIS. Lockheed-Martin Mission Systems (LMMS) was competitively selected after full and open competition. They were awarded a cost plus award fee contract to develop improved capabilities in support of effective Theater Battle Management and to integrate existing capabilities in the DII Common Operating Environment. The program uses an evolutionary acquisition strategy with a series of incremental software releases. This approach accommodates refinement and prioritization of user requirements and improves adaptability to improvements in commercial technology.	, Hanscom AF etition. They v sting capabilitinis approach ac	B, MA manag were awarded a es in the DII C	es the TBMCS a cost plus awa ommon Operal	program, inclurd fee contracting Environme	iding CIS. Lo to develop im int. The progra if user requires	ckheed-Martin proved capabil im uses an evo nents and impi	i Mission Syst lities in suppoi dutionary acqu roves adaptab	ems (LMMS) was rt of effective Thez nisition strategy wi ility to improveme	competitively ater Battle ith a series of arts in
9	F. Schedule Profile			-	EY 1999 2 3	4	FY 2000 1 2 3	2000 3 4	EY 1	FY 2001
933333	TBMCS S/W Version 1.0 In-Plant Test Version 1.0 Release TBMCS Version 1.1 In-Plant Test Version 1.1 Release					*	×		×	
"	Project 674773	i	i i	Pag	Page 3 of 5 Pages				Exhibit R-2 (F	Exhibit R-2 (PE 0207414F)

	RDT&E PROGRAM ELEMENT	RAM ELE	MENT/P	PROJECT C	OST BF	COST BREAKDOWN (R-3)	VN (R-3)		DATE Fe	February 2000	00
BU[вирсет астилту 07 - Operational System Development	Jevelopme	nt		PE NUMBER AN 0207414F	PE NUMBER AND TITLE 0207414F COMB/	AT INTELI	HITTE COMBAT INTELLIGENCE SYSTEM	SYSTEM	9 9	PROJECT 674773
9	A. Project Cost Breakdown (\$ in Thousands)	(\$ in Thousan	(Sp				EV 1000	000	0000 /53	•	EV 2001
99	Software Development Engineering Support						12,328 1307	12,328 1.307) 11 12	3 0	0
<u> </u>							13,6	13,635)	0	0
9	B. Budget Acquisition History and Planning Information (\$ in Thousands)	ry and Plannin	g Informatic	n (\$ in Thousan	(St						
3	Performing Organizations:										
		Contract	** Y	Dome	D						
	Performing	or Funding	Award or Obligation	Activity	Office	Total Prior	Budget	Budget	Budget	Budget to	Total
	Activity	Vehicle	Date	EAC	EAC	to FY 1999	FY 1999	EX 2000	FY 2001	Complete	Program
	aniz	zations	30	d H	É		0.00			ć	
	d Martin Mission	SS/CFAF/FR	Oct 95	IBD	IBD	11,849	17,717			-	24,121
	Systems Support and Management Organizations	anizations									
	TEMS	C/T&M	Varions	N/A	N/A	647	888			0	1,535
	MITRE	SS/CPAF	Oct 94	N/A	N/A	508	419			0	927
	Test and Evaluation Organizations Test Support Proj	tions Project Order	Various	N/A	N/A	45	26			0	101
E	Government Furnished Property:	perty.									
		Contract									
	Item	Method/Lype or Funding	Award or Obligation	Delivery		Total Prior	Budget	Budget	Budget	Budget to	Total
	Description	<u>Vehicle</u>	Date	<u>Date</u>		to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
	Product Development Property Support and Management Property	y perty									
	Test and Evaluation Property	,									
	Project 674773	:		Pag	Page 4 of 5 Pages	ies.			Exhibi	Exhibit R-3 (PE 0207414F)	07414F)

RDT&E PROGRAM ELEMENT/PROJECT	I/PROJECT COST BREAKDOWN (R-3)	VN (R-3)		DATE Fe	February 2000	s e
BUDGET ACTIVITY Onerational System Develonment	PE NUMBER AND TITLE 0207414F COMBAT INTELLIGENCE SYSTEM	T INTEL	FNCE	SYSTEM	ia c	PROJECT 674773
	Total Prior	Budget	Budget	Budget	Budget to	Total
Subtotals	to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
Subtotal Product Development	11,849	12,272			0	24,121
Subtotal Support and Management	1,155	1,307			0	2,462
Subtotal Test and Evaluation	45	26			0	101
Total Project	13,049	13,635			0	26,684
Project 674773	Page 5 of 5 Pages			Exhibil	Exhibit R-3 (PE 0207414F)	J7414F)

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	RDT&E BUDGET ITEM JU	STIFIC	ATION	STIFICATION SHEET (R-2 Exhibit)	(R-2 Ex	hibit)		DATE	Februa	February 2000
BUDGET 07 - O	вирсет аститу 07 - Operational System Development			PE NUMBER A 0207417F (AWACS)	PE NUMBER AND TITLE 0207417F Airbon (AWACS)	rne Warn	PE NUMBER AND TITLE 0207417F Airborne Warning and Control System (AWACS)	Control (System	PROJECT 67411L
	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
67411L	Airborne Warning & Control System (AWACS)	31,669	36,178	35,653	31,969	99,370	95,799	132,942	132,942 Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

(U) A. Mission Description

Develops and integrates system improvements to enable the E-3 AWACS to remain an effective, survivable airborne surveillance system for command and control of tactical forces and for strategic defense of the U.S.

The Block 30/35 upgrade includes Electronic Support Measures, Central Computer Memory Upgrade, Joint Tactical Information Distribution System (ITIDS) Class 2H/TADIL J and NAVSTAR Global Positioning System Integrated Navigation System. The Block 30/35 upgrade is a production program.

The Radar System Improvement Program (RSIP) will increase radar reliability and maintainability, improve E-3 surveillance capability against evolving threats posed by low radar cross section fighters and cruise missiles, improve electronic counter- countermeasures, and enhance man-machine interface for the Airborne Radar Technicians. RSIP is a production program.

upgrades. To ensure the warfighter requirements are met, these risk reduction studies include concept exploration to obtain Track Quality 7, modeling/simulation of the Block 40/45 architecture, designing a COTS technology insertion process, and reducing the total ownership cost. Other research efforts focus on design alternatives for Block 40/45 Risk Reduction performs research and analysis of selected high-risk areas to the next major AWACS Mission System Computers and Displays upgrade. This essential modernization will improve the sensor-to-shooter capability, improve Combat ID, and open the existing architecture to enable cheaper and faster data fusion with Multi-Source Integration and Data Link Infrastructure timing constraints.

Real-Time Defense Information Infrastructure Common Operating Environment, development and execution of Joint Expeditionary Force Experiment (JEFX) initiatives allowing continuous improvements and implementation of the C2ISR roadmap for the Airborne Early Warning & Control mission area. These efforts include AWACS augmentation with UAV surveillance sensors, AWACS weapon system integration with Integrated Command and Control System, development of and migration to Upgrades/Systems Architecture Improvements) are concept exploration and program definition/risk reduction efforts that implement a spiral development process to be demonstrated on AWACS during JEFX live-fly experiments, rapid prototyping of 'plug and play' applications that provide significant situational awareness The Command & Control, Intelligence, Surveillance, and Reconnaissance (C2ISR) System Architecture Improvements (formerly Offensive Counter Air

The E-2/E-3 commonality effort focuses primarily on advanced receiver and processing technologies. This effort provides a forum to review all activities in the E-2 and Periodic Depot Maintenance/Airframe (PDMA) are modifications to the E-3 mission equipment and aircraft systems designed to keep the aircraft operational. E-3 AWACS programs and identify additional opportunities for technology and development exploitation.

improvements to the Air Battle Manager in Offensive and Defensive Counter Air missions.

Project 67411L

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Page 1 of 6 Pages

Exhibit R-2 (PE 0207417F)

	RDT&E	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2000
800 07	вирсет Астилту 07 - Operational System Development	em Development	PE NUMBER AND TITLE 0207417F Airborne Warning and Control System (AWACS)	PROJECT ol System 67411L
Ð	A. Mission Description Continued Test System 3 (TS-3)/AWACS Devtest aircraft and associated laborator Cooperative Engagement Capability system to support a Single Integrate the AWACS contribution to a tactic	A. Mission Description Continued Test System 3 (TS-3)/AWACS Development and Production Test (ADAPT) support inc test aircraft and associated laboratory facilities located at Boeing in Seattle, Washington. Cooperative Engagement Capability (CEC) funding in FY00 provides the initial design t system to support a Single Integrated Air Picture (SIAP) flight demonstration. This actifier AWACS contribution to a tactical sensor network with CEC on AWACS.	A. Mission Description Continued Test System 3 (TS-3)/AWACS Development and Production Test (ADAPT) support includes maintenance and operations of the government-owned/contractor-operated test aircraft and associated laboratory facilities located at Boeing in Seattle, Washington. Cooperative Engagement Capability (CEC) funding in FY00 provides the initial design to integrate the Navy-developed CEC hardware with the AWACS mission system to support a Single Integrated Air Picture (SIAP) flight demonstration. This activity reduces the risk of a full development program to integrate and demonstrate the AWACS contribution to a tactical sensor network with CEC on AWACS.	mment-owned/contractor-operated e with the AWACS mission gram to integrate and demonstrate
55555	EY 1999 (\$ in Thousands) \$6,451 C21 \$6,946 E-2 \$3,958 JTI \$14,314 AD \$31,669 Tot	ods) C2ISR System Architecture Improvements E-2/E-3 Commonality JTIDS DLI ADAPT support and program sustaining efforts Total		
333333	FY 2000 (\$ in Thousands) \$6,900 C21 \$7,796 Tes \$15,800 Coc \$5,682 Blo	1dS) C2ISR System Architecture Improvements Test System-3/ADAPT support and program sustaining efforts Cooperative Engagement Capability (CEC) on TS-3 Block 40/45 Risk Reduction (result of Congressional transfer from AWACS procurement) Total	g efforts ransfer from AWACS procurement)	
99999	FY 2001 (\$ in Thousands) \$13,614 C21 \$15,176 Tes \$6,863 Blo \$35,653 Tot	 ids) CZISR System Architecture Improvements Test System-3/ADAPT support and program sustaining efforts Block 40/45 Risk Reduction Total 	g efforts	
<u></u>	B. Budget Activity Justification Operational Systems Developmer continuing sustainment activities.	ıt, Budget Activity 7.	AWACS is a fielded, operational system currently undergoing major modifications/block upgrades and	ions/block upgrades and
Δ.	Project 67411L	Page	Page 2 of 6 Pages	Exhibit R-2 (PE 0207417F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	GET ITE	M JUSTIF	ICATION	SHEET	R-2 Exhi	bit)	/Q	DATE February 2000	, 2000
019 07	BUDGET ACTIVITY O7 - Operational System Development	velopment			PE NUMBER AND TITLE 0207417F Airbo (AWACS)	AND TITLE Airborne Airborne	PE NUMBER AND TITLE 0207417F Airborne Warning and Control System (AWACS)	and Contr	ol System	РРОЈЕСТ 67411L
<u>6</u>	C. Program Change Summary (\$ in Thousands)	(\$ in Thousar	(spi			·	000 183		1000	F
3	Previous President's Budget (FY 2000 PBR)	2000 PBR)				33,173	33,393		<u>FY 2001</u> 49,170	TBD TBD
9	Appropriated Value					34,189	36,393			
9	Adjustments to Appropriated Value	lue								
	a. Congressional/General Reductions	tions				-1,016	-16			
	b. Small Business Innovative Research	search schold Renroor	E			-1,286	100			
	d. Below Threshold Reprogram	gordan projec				41				
	e. Rescissions					-177				
53	f. Other Adjustments to Budget Years Since FY 2000 PBR	nce FY 2000 P	BR			31 660	36 170	·	-13,517	TBD
9	Significant Program Changes:					00110				
\in	D. Other Program Funding Summary (\$ in Thousands)	nmary (S in T	housands)							
0		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to	Total Cost
56	AF RDT&E Other APPN									
33	Aircraft Procurement, AF, E-3	112,774	104,254	88,654	70,361	59,181	94,849	105,826		TBD
9	Mods E-3 Initial Spares, AF	3,084	40,499	8,227	11,052	15,523	7,207	8,845		TBD
9	E. Acquisition Strategy Block 30/35: The Electronic Support Measures (ESM) component of Block 30/35 is joint development program with NATO. The production contract utilizes a Fixed Price Incentive Fee (FPIF) plan with options to Boeing for ESM and other Block 30/35 Group A hardware. The contract with Lockheed for the CC-2E memory upgrade is a fixed price contact with follow-on options. JTIDS and Global Positioning System hardware is acquired via their respective program office-awarded contracts. The Radar System Improvement Program (RSIP) is a cooperative development program with NATO and the United Kingdom. Boeing is the prime integrating contractor; Northrop-Grumman is the subcontractor for radar component items. The RSIP production contract is Firm Fixed Price (FFP) with priced options through FY99 and is a	port Measures rith options to won options. ram (RSIP) is tractor for radi	(ESM) compositions for ES TTIDS and Glass a cooperative or component in component	ment of Block M and other Blobal Positionin Jevelopment pritems. The RS tems. The RS	30/35 is joint of lock 30/35 Grogstem hard rogram with N. IP production of	evelopment pr up A hardware ware is acquire ATO and the U	ogram with N. 2. The contract 3d via their rest Inited Kingdon 6 Fixed Price ()	ATO. The pro: with Lockhee; with Lockhee pective program n. Boeing is the FFP) with price	duction contract used for the CC-2E months of the CC-2E months of the prime integrating do options through	tilizes a Fixed nemory upgrade contracts. The g contractor;
<u></u>	Project 67411L			Рад	Page 3 of 6 Pages				Exhibit R-2 (PE 0207417F)	E 0207417F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2000
8UE 07	вирсет Астилту 07 - Operational System Development	PENUMBER AND TITLE 0207417F Airborne Warning and Control System (AWACS)	PROJECT 67411L
<u>(c)</u>	E. Acquisition Strategy Continued solution contract. The PDMA acquisition strategy utilizes an approved contract structure that includes multiple contracts with multiple organizations with overlapping and continuous performance periods. The Program Office has the flexibility to quickly add specific PDMA tasks as funding is made available.	cquisition strategy utilizes an approved contract structuds. The Program Office has the flexibility to quickly a	re that includes multiple contracts dd specific PDMA tasks as
9	E. Schedule Profile	EX 1999 EY 2000	FY 2001
<u> </u>	RSIP Trial Install Start RSIP Trial Install Complete RSIP Trial Install Complete RSIP IOC 3QTR FY00 RSIP FOT&E Complete RSIP KIT DELIVERY (#1) RSIP KIT DELIVERY (#3) RSIP KIT DELIVERY (#4) RSIP KIT DELIVERY (#6) RSIP KIT DELIVERY (#6) RSIP KIT DELIVERY (#6) RSIP KIT DELIVERY (#6) RSIP KIT DELIVERY (#10) RSIP KIT DELIVERY (#10) RSIP KIT DELIVERY (#13)	* * * *	×× ×× ×
	Project 67411L	Page 4 of 6 Pages	Exhibit R-2 (PE 0207417F)

	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	RAM ELE	:MENT/PF	ROJECT C	SOST BE	REAKDO!	WN (R-3)		DATE Fe	February 2000	00
801 07	вирсет Астилту 07 - Operational System Development	Developme	nt		PE NUMBER AN 0207417F (AWACS)		ne Warnin	மார் Airborne Warning and Control System	ntrol Sys		РРОЈЕСТ 67411L
(E)	A. Project Cost Breakdown (\$ in Thousands)	(\$ in Thousand	(Sp						26.25		1000 231
9							FY 1	<u>FY 1999</u> 26,601	32,686	3 9	32,748
99	MITRE/TEMS Travel						4, <u>,</u>	4,343 412	2,429	6. E	2,200
<u> </u>							31,	313 31,669	300 36,178	ı ⊙ ∞	35,653
<u> </u>	B. Budget Acquisition History and Planning Information (\$ in Thousands)	ry and Plannin	g Information	ı (\$ in Thousan	ds)						
9	Performing Organizations:)									
	Government Performing	Method/Type	Award or	Performing	Project Office	Total Brion	Dudget	Dudget	Dudget	Dudget to	Total
	Activity	Vehicle	Date	EAC	EAC	to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
	Product Development Organizations	zations	9		;	1					
	(U) Boeing (RSIP)** (U) Boeing (Block 40/45)	C/FPIF FPIF/CPAF	9/89 N/A	415,900 0	400,417 0	325,672 0	0	5.682	6.863	0 110.297	325,672
	(U) Boeing (Blk 30/35)**	SS/FPIF	5/87	N/A	N/A	291,667		•		0	291,667
	(U) Boeing (PDMA)	Multiple	N/A	N/A	N/A	58,149	0	0	0		58,149
	(U) Boeing (C2ISR Sys Arch FPIF/CPAF Imp)	FPIF/CPAF	N/A	N/A	N/A	950	6,451	6,900	13,614	45,670	73,585
	(U) Raytheon (E-2/E-3 Commonality)	Multiple	N/A	N/A	N/A	12,752	6,946			0	19,698
	(U) Raytheon (CEC) CPAF 11/99 42,000 42,000 0 15,800 0 15,800 0 3,000 3,000 ** N/A based on PDMA Acquisition Strategy which includes multiple contracts with multiple organizations with overlanning and continuing performance periods	CPAF isition Strategy	11/99 which includes	42,000 smultiple contra	42,000	0 Itinle organizat	ions with over	15,800	0 ontiniing ne	3,000	18,800 iods
	** Total Program does not include NATO funds.	clude NATO fu	nds.	J		0		, 6			
	Support and Management Organizations (U)Support/TEMS Multiple	<u>anizations</u> Multiple	N/A	N/A	N/A	557,271	5,068	3,492	2,905	Continuing	TBD
	MITRE, travel, other	contracts									
	Project 67411L			Pa	Page 5 of 6 Pages	ses.			Exhib	Exhibit R-3 (PE 0207417F)	(07417F)

RDT&E PROGRAM ELEMENT	ENT/PROJECT COST BREAKDOWN (R-3)	SOST BI	REAKDO!	WN (R-3)		DATE Fe	February 2000	000
BUDGET ACTIVITY 07 - Operational System Development		PE NUMBER / 0207417F (AWACS)	PE NUMBER AND TITLE 0207417F Airborne Warning and Control System (AWACS)	ne Warnin	ig and Cor	ntrol Sys	,	РРОЈЕСТ 67411L
 (U) Performing Organizations Continued: Test and Evaluation Organizations (U) Test System-3 ADAPT Multiple N/A Contract / Other test activities 	N/A	N/A	47,987	13,204	4,304	12,271	Continuing	TBD
Subtotals Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project			Total Prior to FY 1999 689,190 557,271 47,987 1,294,448	Budget EX 1999 13,397 5,068 13,204 31,669	Budget EX 2000 28,382 3,492 4,304 36,178	Budget EX 2001 20,477 2,905 12,271 35,653	Budget to Complete 158,967 TBD TBD	Total Program 910,413 TBD TBD
						: !		
Project 6/411L	Pa	Page 6 of 6 Pages	ges			Exuip	Exhibit R-3 (PE 020/41/F)	207417F)

PE NUMBER: 0207423F PE TITLE: Advanced Communications Systems

	RDT&E BUDGET ITEM JI	JSTIFICATION SHEET (R-2 Exhibit)	ATION	SHEET	(R-2 Ex	thibit)		DATE	Februa	February 2000
BUDGET 07 - O	BUDGET ACTIVITY 07 - Operational System Development			PE NUMBER 0207423	PE NUMBER AND TITLE 0207423F Advar	PE NUMBER AND TITLE 0207423F Advanced Communications Systems	nmunica	tions Sy	stems	
	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	5,527	0	2,867	2,907	2,954	3,013	3,074	3,074 Continuing	TBD
671013	Theater Deployable Communications (TDC)	1,964	0	2,649	2,907	2,954	3,013	3,074	3,074 Continuing	TBD
672982	Anti-Jam Radio Communications	3,563	0	218	0	0	0	0	0	23,139
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

(U) A. Mission Description

communications. SINCGARS (Single Channel Ground and Airborne Radio System) provides anti-jam, VHF frequency-hopping voice and data communications and is Together these three systems provide communications infrastructure in deployed bare base environments. FY99 funding was provided for EFX99 it is part of an annual Rapid Response Air Expeditionary Force (RAEF). The experiment is designed to meet Chief of Staff of the Air Force (CSAF) requirement to explore how advanced war fighter experiment to demonstrate emerging Air Force capabilities to deploy and employ decisive air and space power for the Joint Force Commander through a operational deployable communications, and integration of commercial off the shelf (COTS) equipment that support tactical air operations in a combat environment. communications squadrons, Air Force Special Operations Command and Air Mobility Command communication units, and Theater Air Control System units. This command and control capabilities and new operational processes enable modern aerospace forces to decisively halt an invading force anywhere in the world. It is a operations. The Theater Deployable Communications (TDC) program provides funding for the research, development, test and evaluation for the modernization of The Advanced Communication Systems program procures commercially available ground communications equipment for deployment to theaters of operation; and the primary means of ECCM communications between Air Force, Army, and USMC aircraft and ground units involved in close air support and joint battlefield funding also provides Systems Program Office (SPO) internal management, engineering and technical support for the continuing spiral development of (COTS) equipment and will examine appropriate emerging technologies. TDC equipment is composed of three components Lightweight Multi band Satellite Terminal develops and procures jam-resistant, ultra high frequency (UHF) and very high frequency (VHF) frequency-hopping tactical radios. The ANTI-JAM RADIO This includes the integration of deployable communications equipment for active duty, guard and reserve forces. Equipment will be fielded at wings, combat COMMUNICATIONS (HAVE QUICK) UHF radios provide the primary Air Force and DOD UHF Electronic Counter-Countermeasures (ECCM) voice (LMSTs), the Integrated Communications Access Packages (ICAP), and Network Management System/Base Information Protection (NMS/BIP). continuous spiral development process for the C2 Weapon System.

Page 1 of 9 Pages

Exhibit R-2 (PE 0207423F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ICATION SHEET (R-2 Exhib	it)	DATE February 2000	, 2000
902 04	вирсет астилту 07 - Operational System Development	PE NUMBER AND TITLE 0207423F Advanced	⊌ਹ ਸਾ⊓∟ Advanced Communications Systems	ons Systems	
<u>(5)</u>	B. Budget Activity Justification This program is in budget activity 7, Operational System Development RDT&E, AF because it examines appropriate emerging technologies for the continuing spiral development of commercial off-the-shelf (COTS) equipment; provide software development; provides support for the the fielded HAVE QUICK family of radios; and determines and resolves integration issues pertaining to COTS equipment	n Development RDT&E, AF because it examines ap oment; provide software development; provides supp COTS equipment	ppropriate emerging t	echnologies for the conti d HAVE QUICK family	inuing spiral of radios; and
9	C. Program Change Summary (\$ in Thousands)	0001 73:1	0000 232	1000 121	Ç F
33	Previous President's Budget (FY 2000 PBR) Appropriated Value	2,348 2,348 2,348	2,864 0	2,892	TBD
<u>5</u>	Adjustments to Appropriated Value a. Congressional/General Reductions b. Small Business Innovative Research	-172 -67	0 0		
	d. Below Threshold Reprogram e. Rescissions f. Other	3,449	0 0		TBD
99	Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR	5,527	0	-25 2,867	TBD
5	Significant Program Changes: FY99: Funds reprogrammed by SAF/AQI to support EFX initiatives within PE 672982 ANTI-JAM	atives within PE 672982 ANTI-JAM			
		Page 2 of 9 Pages		Exhibit R-2 (PE 0207423F)	≡ 0207423F)

	RDT&E	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	STIFICA	 NOIL	SHEET (R-2A E	xhibit)		DATE	February 2000	2000
8UD 07	BUDGET ACTIVITY 07 - Operational Svs	BUDGET ACTIVITY 07 - Operational System Development			PE NUMBER AN 0207423F	PE NUMBER AND TITLE 0207423F Advan	D ТITLE Advanced Communications Systems	nmunica	fions Sv	stems	PROJECT 671013
	COST (\$ in	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate		FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
671013		Theater Deployable Communications (TDC)	1,964	0	2,649	2,907	2,954	3,013	3,074	Continuing	TBD
9	A. Mission Description As clearly demonstrated not meet today's project flying forces. Deployme emphasizes COTS equip and is designed to suppo equipped with TDC Inte in support of theater air Command Center and bx Required interoperability	As clearly demonstrated during Desert Shield/Desert Storm (DS/DS), 70's generation of deployable communications equipment is bulky, inflexible in design and does not meet today's projected airlift availability or interoperability standards. Air Force planning calls for initial communications assets to be in place prior to the arrival of flying forces. Deployment priorities for DS/DS did not allow timely arrival of communications assets. The Theater Deployable Communications (TDC) program emphasizes COTS equipment to augment existing assets or replace factical communications packages. The resulting TDC packages have reduced airlift requirements and is designed to support a wide range of operational scenarios during deployment/employment, expansion and sustaining operations. Combat communications units equipped with TDC Integrated Communication Access Packages (ICAP) and Lightweight Mulitband Satellite Terminals (LMST) were deployed to Bosnia and Kosovo in support of theater air operations and deployed tactical air and mobility wings. LMST provided the reach back from the forward battle area back to the National Command Center and backbone theater communications required to operate in an austere environment to expedite dissemination of critical war fighter information. Required interoperability testing is provided by Ft. Hauchua, AZ. TDC performance during these operations exceeded Air Force and CINC expectations.	Storm (DS/I perability structure allow time sets or replace I scenarios d ss Packages (tical air and ons required auchua, AZ.	DS), 70's gen undards. Ai ely arrival of e tactical ocuring deplo (TCAP) and mobility wort to operate it TDC perf	S), 70's generation of deployable communications equipment is bulky, inflexible in desindards. Air Force planning calls for initial communications assets to be in place prior to yarrival of communications assets. The Theater Deployable Communications (TDC) tactical communications packages. The resulting TDC packages have reduced airlift rering deployment/employment, expansion and sustaining operations. Combat communic CAP) and Lightweight Mulitband Satellite Terminals (LMST) were deployed to Bosnia nobility wings. LMST provided the reach back from the forward battle area back to the operate in an austere environment to expedite dissemination of critical war fighter inf TDC performance during these operations exceeded Air Force and CINC expectations.	eployable coning calls for ations assets as packages syment, exproyment, exproyment, exprovided the environmenting these oppositions.	ommunicatic r initial com s. The Thea The resulti ansion and si Satellite Ter te reach back t to expedite erations exc	nns equipmes munications ter Deployal ing TDC pac ustaining op minals (LM) k from the fi c disseminati eeded Air F	nt is bulky, i assets to be be Commun skages have erations. Co ST) were deforward battle on of critica orce and CII	in place pricuications (TD reduced airli ombat comm ployed to Bo area back tt il war fighten NC expectati	
999999	EY 1999 (\$ in Thousands) \$299 Cor \$491 Cor \$885 Cor \$289 Cor	ontinue comunications architecture planning Continue development of automation tools Continue interoperability and integration activities Continue production improvement and interface development Total	ecture plann mation tools ntegration ac	ing xivities rface develc	opment						
999	FY 2000 (\$ in Thousands) \$0 No \$0 Tot	nds) No Activity Total									
33333	FY 2001 (\$ in Thousands) \$680 Pre \$1,857 Cor \$112 Pro \$2,649 Tot	Ids) Prepare TDC roadmap and acquisition 'way ahead' Continue field interoperability and integration activities Program Management Activity (travel, supplies, etc) Total	luisition 'way ahead' and integration activit / (travel, supplies, etc)	r ahead' ion activitie iplies, etc)	Š.						
Д.	Project 671013			Page	Page 3 of 9 Pages	S			Ē	hibit R-2A (Exhibit R-2A (PE 0207423F)
					1140						

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	ET ITEM	JUSTIFI	CATION	SHEET (F	3-2A Exh	libit)	Q	DATE February 2000	v 2000
900 04	вирсет астилту 07 - Operational System Development	relopment			PE NUMBER AND TITLE 0207423F Advan	AND TITLE	ыртпе Advanced Communications Systems	ınications	Systems	Р Р 671013
3	B. Project Change Summary									
9	C. Other Program Funding Summary (\$ in Thousands) FY 1999 FY 2000	nmary (\$ in T) FY 1999	housands) FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to	Total Cost
5		Actual	Estimate	<u>Estimate</u>	<u>Estimate</u>	Estimate	Estimate	Estimate	Complete	
<u> </u>		36,322	090'99	90,168	77,961	126,778	158,978	121,463	Continuing	TBD
99	020/423F O&M PE 0207422/0208010F Other Procurement AF, Budget Activity 5, Weapon System Code 86190A, PE	2,926	5,864	8,439	5,255 98	5,349 97	15,246 99	15,278 101	Continuing	TBD
ව		FFP) contracts ICAP) and Nei ed technologie	for Theater E twork Manage s are involved	Aeployable Cor ement System/ , foreign comp	nmunications (Base Informati etition is not al	TDC): Lightv on Protection (lowed.)	veight Multiba NMS/BIP). T	nd Satellite To The TDC contr	erminals (LMST), acts were awarde	, the Integrated d after full and
9	E. Schedule Profile				EY 1999	4	EXZ	EY 2000	, <u>D</u>	FY 2001
999999	ICAP Production Option exercise ICAP Training Option exercise Y2K Compliance Acquisition Milestones (MS III ICAP) Production LMST Deliveries Start NMS/BIP Deliveries continuing * denotes completed event X denotes planned event	AP) t		→ *		t * *	· *	r ×	•	
<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	Project 671013			Pag	Page 4 of 9 Pages				Exhibit R-2A (Exhibit R-2A (PE 0207423F)
					0000					

	RDT&E PROGRAM ELEMENT		/PROJECT COST BREAKDOWN (R-3)	COST BF	(EAKDO)	WN (R-3)		DATE F 6	February 2000	000
BUD(07	вирдет астилту 07 - Operational System Development	opment		PE NUMBE 020742	PE NUMBER AND TITLE 0207423F Advanced Communications Systems	ced Comr	nunication	ns Svster	ns Tr	PROJECT 671013
9	A. Project Cost Breakdown (\$ in Thousands)	10usands)								147
Œ	Software Support					<u>}</u>	FY 1999 713	FY 2000	3 -	EX 2001
9	Engineering Support					•	306			909
3	Integration Activities						088		0	1,109
E E	Travel Miscellaneons						55		0 0	100
3	Total					1,	1,964		0	2,649
9	B. Budget Acquisition History and Planning Information (\$ in Thousands)	Planning Informat	tion (\$ in Thousan	(spi						
9	Performing Organizations:									
	L									
	Covernment Method/Lype Darforming or Funding	VIype Award or	Performing Activity	Project	Total Drion	Dudget	Dudget	Dudget	Dudgat to	Total
		*		EAC	to FY 1999	EY 1999	EX 2000	EY 2001	Complete	Program
	Product Development Organizations								ı)
	Various				4,323	610	0	813	Continuing	TBD
	Support and Management Organizations									
	MITRE	OCT 97	TBD	TBD	4,559	915	0	226	Continuing	TBD
	In house contractor spt FFP	Varies			1,459	439	0	829	Continuing	TBD
	Test and Evaluation Organizations			,						
	0.1640401.				Total Prior	Budget	Budget	Budget	Budget to	Total
	Subtotal Product Develonment				4 323	610	0	813	TRD	TRD
	Subtotal Support and Management				6,018	1,354	0	1,836	TBD	TBD
	Subtotal Test and Evaluation					•				
	Total Project				10,341	1,964	0	2,649	TBD	TBD
Δ.	Project 671013		Pa	Page 5 of 9 Pages	S.			Fxhib	Exhibit R-3 (PF 0207423E)	207423E)
	01010			150 J 01 J 1 ag	3			LAINE	11 1 2 1 E C	4014201

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	JUSTIFIC	ATION 8	SHEET (R-2A E	xhibit)		DATE	February 2000	y 2000
BUDC 07 -	BUDGET ACTIVITY 107 - Operational System Development			PE NUMBER 0207423	PE NUMBER AND TITLE 0207423F Advail	nced Cor	PE NUMBER AND TITLE 0207423F Advanced Communications Systems	tions Sy	stems	PROJECT 672982
	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
672982	32 Anti-Jam Radio Communications	3,563	0	218	0	0	0	0	0	23,139
(2)	A. Mission Description The fast paced development of emerging communication technologies by potentially hostile nations dictates that the U.S. maintains a technological lead. Ultra high frequency (UHF) and Very High Frequency (VHF) frequency hopping voice and data radios are needed for jam resistant communications between tactical aircraft and airborne and ground control elements. The HAVE QUICK waveform used in these radios is a NATO standard for UHF anti-jam communications. The HAVE QUICK UHF radios provide the primary Air Force and DOD UHF Electronic Countermeasures (ECCM) voice communications. The SINCGARS (Single Channel Ground and Airborne Radio System) waveform provides anti-jam, very high frequency (VHF) hopping voice and data communications and is the primary mode of ECCM communications between the Air Force, Army, and USMC. It is utilized during Close Air Support (CAS) for maneuver units and joint battlefield operations.	nication techn F) frequency ho E QUICK wav OD UHF Elect rovides anti-jar	ologies by pc pping voice sform used ir onic Counter n, very high	otentially hos and data rad n these radio r-Counterme frequency (\big(\)	itile nations ios are needo s is a NATO asures (ECC 7HF) hoppin	dictates that ed for jam re standard foi M) voice cc ng voice and pport (CAS)	the U.S. ma ssistant com r UHF anti-j ommunicatic I data comm	intains a tec munications am commur ons. The SIR unications a	hnological le between tact nications. Th VCGARS (Si nd is the prirr joint battlefi,	ad. Ultra high cal aircraft and b. HAVE QUICK ngle Channel ary mode of ald operations.
55555	FY 1999 (\$\secondarrow{\seconda	provements in arrease in air tra	inti-jam perf Tic control cl	ormance and hannel band	other anti-j: width and m	am techniqu odulation tec	es chniques			
999	FY 2000 (\$\\$\) in Thousands) \$0 No Activity \$0 Total									
9999999	 EY 2001 (\$\\$\$ in Thousands\$) \$98 Software updates for resolution of GPS incompatibility (i.e. F-16, E-3, and A-10) \$10 Required printing and reproduction of the HAVE QUICK updated technical orders for GPS \$50 Support fielding of AN/ARC-222 and AFKDMS PMA \$10 Work with users to improve supportability for AN/ARC-164, AN/ARC-222 and AN/ARC-204 units \$218 Total 	ution of GPS in oduction of the RC-222 and AF e supportability	compatibility HAVE QUII KDMS for AN/AR	of GPS incompatibility (i.e. F-16, E-3, and A-10) ion of the HAVE QUICK updated technical order?2 and AFKDMS portability for AN/ARC-164, AN/ARC-222 and	3-3, and A-1 technical or ARC-222 an	0) ders for GPS d AN/ARC-:	5 204 units			
<u>e</u>	B. Project Change Summary FY00 zeroed out by Congress (Consolidation and Elimination of Small Programs)	Elimination of	Small Progra	ams)				Ĺ	2 vc C	
Ţ	Project 67.2962		Fage	rage 6 ot 9 rages	80			Ĭ	NIDIT K-ZA (EXNIBIT K-ZA (PE 020/423F)

Project 672982 Proj		RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	JUSTIFIC	SATION	SHEET (F	3-2A Ext	nibit)	٥	DATE February 2000	, 2000
AFROTRE Actual Extinate Actual Estimate Actual Estimate Actual Estimate Actual Estimate Actual Estimate Estimate Estimate Estimate Estimate Estimate Estimate Estimate Compiles Compiles Compiles Compiles Compiles DACQUERTORY Other APPN DACQUERTORY Budget Activity 3, Weapon SO7423F DACQUERTORY DACQUERTORY DACQUERTORY DACQUERTORY DACQUERTORY The Anti-Jam (SINCGARS) is a army lead program that was awarded after full open competition E. Schedule Profile The Anti-Jam (SINCGARS) The Anti-Jam (SINCGARS) Improve supportability Support fielding - denotes completed event X denotes planned event X denotes planned event X denotes planned event Exhibit R-2A (PE D20)	800 02	зет астіvіту - Operational System Development			PE NUMBER 0207423F	AND TITLE Advance	ed Commu	ınications	Systems	PROJECT 672982
AF RDT RE Other Procurement AF, Budget Activity 3, Weapon System Code 837102, PE D. Acquisition Strategy The Anti-Jam (SINCGARS) is a army lead program that was awarded after full open competition E. Schedule Profile D. Acquisition Strategy The Anti-Jam (SINCGARS) is a army lead program that was awarded after full open competition E. Schedule Profile D. Acquisition Strategy The Anti-Jam (SINCGARS) is a army lead program that was awarded after full open competition E. Schedule Profile Software updatess Improve supportability Support fielding * denotes planned event X denotes planned event X denotes planned event Exhibit R-2A (PE D207422	<u> </u>	C. Other Program Funding Summary (\$ in Tho FY 1999 I Actual	tousands) FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to	Total Co
D. Acquisition Strategy The Anti-Jam (SINCGARS) is a army lead program that was awarded after full open competition E. Schedule Profile E. Schedule Profile EY 1999 I 2 3 4 1 2 3 4 Investigate anti-jam improvements Software updates Inmprove supportability Support fielding * denotes completed event X denotes planned event X denotes planned event Project 672982 Page 7 of 9 Pages	999	E N urement AF, 0 tivity 3, Weapon de 837102, PE	13,309	22,169	23,628	24,003	12,777	9,703	Continuing	TBI
E. Schedule Profile FY 1999 Investigate anti-jam improvements Software updates Improve supportability Support fielding * denotes completed event X denotes planned event X denotes planned event Project 672982 Project 672982 FY 1000 * 4 1 2 3 4 1 2	<u>E</u>	D. Acquisition Strategy The Anti-Jam (SINCGARS) is a army lead prograr	am that was av	varded after fi	ıll open compe	tition				
Investigate anti-jam improvements Software updates Improve supportability Support fielding * denotes completed event X denotes planned event Y denotes planned event Project 672982 Page 7 of 9 Pages	9			-	FY 1999 2 3	4	FY 2		1 EX	
Page 7 of 9 Pages	9999	Investigate anti-jam improvements Software updates Improve supportability Support fielding * denotes completed event X denotes planned event				*				
Page 7 of 9 Pages										
		roject 672982		Pag	e 7 of 9 Pages				Exhibit R-2A (P	E 0207423F)

	RDT&E PROGRAM ELEMENT	ZAM ELE		/PROJECT COST BREAKDOWN (R-3)	OST BE	EAKDOV	VN (R-3)		DATE F.P.	February 2000	
8UB	GET ACT	evelopme			PE NUMBER AT 0207423F	PE NUMBER AND TITLE 0207423F Advance	ID TITLE Advanced Communications Systems	nunication	Systen		PROJECT 672982
3	A. Project Cost Breakdown (\$ in Thousands)	S in Thousan	<u>is</u>				1.7.2	90	00C X II		1000 XX
							FX 1999	55 S	<u> </u>	21 ∕	1002 X 4
9	Software Support							32	_	0	86
9	Engineering Support							30)	0	80
9	Evaluation Analysis							40	_	0	20
9	Test and Evaluation							15	_	0	0
9	PMA							30	J	0	10
9	Unreleased budget							12	J	0	0
9							3,	3,370	•	0	0
9	Miscellaneous						7 7	34		0 0	10
9							ب	coc		5	210
3	B. Budget Acquisition History and Planning Information (\$ in Thousands)	<u>y and Plannin</u>	g Information	(S in Thousand	(জ						
3	Performing Organizations:										
	Contractor or	Contract									
	+1	Method/Type	Award or	<u>Performing</u>	Project						
	ing	or Funding	Obligation	Activity	Office	Total Prior	Budget	Budget	Budget	Budget to	Total
	Activity	Vehicle	<u>Date</u>	EAC	EAC	to FY 1999	FX 1999	FX 2000	FY 2001	Complete	Program
	Froduct Development Organizations	ations					•				•
	Joint Spectrum Center	:					4				4
	Support and Management Organizations	mizations							Ç		(
	Warner Kobins ALC						;		48		48
		i.	C	Ę	É	C	90	c	01	C	9/
	TYSP/TEMS 1	rrr FFP	OCI 9/ Varies	IBD	IBU	333 19 005	41	>	0 091		423
	T. C.	111	A di ICS			17,005	ř	•	001	>	12,200
	A EOTEC NIVATION OF SANISATIONS	Suo.									
		W/N					3 200				2 202
	Et A 23						3,302				2,506,6
ш.	Project 672982			Page	Page 8 of 9 Pages	SS			Exhibi	Exhibit R-3 (PE 0207423F)	207423F)
											.==:

RDT&E PROGRAM ELEMENT/PROJECT CO	(REOJECT COST BREAKDOWN (R-3)	VN (R-3)		DATE Fe	February 2000	00
	PE NUMBER AND TITLE					PROJECT
07 - Operational System Development	0207423F Advanced Communications Systems	sed Comn	nunication	ıs Systen		672982
Cultrotole	Total Prior	Budget FV 1000	Budget FV 2000	Budget FV 2001	Budget to	Total Program
Subtotal Product Development		4	7 7 7 7	1 4 4 4	AVAITAMINA	4
Subtotal Support and Management	19,358	177	0	218	0	19,753
Subtotal Test and Evaluation		3,382				3,382
Total Project	19,358	3,563	0	218	0	23,139
EFA 99 lunding reflected in Budget F 1 1999 as Subtotal Test and Evaluation	_					
Project 672982	Page 9 of 9 Pages			Exhibi	Exhibit R-3 (PE 0207423F)	7423F)
	i i i					

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PE NUMBER: 0207438F PE TITLE: Theater Battle Management (TBM) C41

	RDT&E BUDGET ITEM JU	JSTIFIC	ATION	STIFICATION SHEET (R-2 Exhibit)	(R-2 Ex	thibit)		DATE	Februa	February 2000
BUDGET 07 - 0	вирсет аститу 07 - Operational System Development			PE NUMBER 0207438	PE NUMBER AND TITLE 0207438F Theat	er Battle	PE NUMBER AND TITLE 0207438F Theater Battle Management (TBM) C4	ment (TB	M) C4I	
	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	48,325	46,406	41,068	32,388	30,119	30,721	31,331	Continuing	TBD
673330	Cmd Cntrol Info Process Sys (C2IPS)	££6'6	11,644	9,274	2,195	2,314	0	0	0	55,654
674287	Contingency Theater Automated Planning System (CTAPS)	34,545	0	0	0	0	0	0	0	104,634
674288	Wing C2 System (WCCS)	3,847	0	0	0	0	0	0	0	19,975
674790	Theater Battle Management Core System (TBMCS)	0	25,799	20,258	17,968	17,526	20,236	20,638	Continuing	TBD
674802	Deliberate and Crisis Action Planning and Execution Segment (DCAPES)	0	8,963	11,536	12,225	10,279	10,485	10,693	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

Environment (DII COE) compliant system and will be managed as a single project with the fielding of TBMCS 1.0 in FY00. DCAPES was previously funded in FY99 under Note: Starting in FY00 the RDT&E funding for CTAPS (project 4287), WCCS (project 4288), and Combat Intelligence System (CIS) (PE 27414F, project 4773) will be combined in PE 27438F under project 4790, TBMCS. CTAPS, WCCS and CIS will be integrated in a single Defense Information Infrastructure Common Operating PE 33150F.

(U) A. Mission Description

operating environment (COE). Acquisition of these systems will allow the execution of TBM planning, intelligence, and operational functions of the Joint Forces Air Component Commander (JFACC), including generation and dissemination of the air tasking order (ATO). Projects included in this program are Command & Control Information Processing System (C2IPS), Contingency Theater Automated Planning System (CTAPS), Wing Command & Control System (WCCS), Theater Battle TBM C4I develops force-level and wing-level command, control, and intelligence systems which utilize DoD's Defense Information Infrastructure (DII) common Management Core Systems (TBMCS), and Deliberate and Crisis Action Planning and Execution Segment (DCAPES).

Page 1 of 20 Pages

Exhibit R-2 (PE 0207438F)

	RDT&E BUDGET ITEM JUSTIF	STIFICATION SHEET (R-2 Exhibit)	it)	DATE February 2000	, 2000
8UD(07	BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0207438F Theater Battle Management (TBM) C4	attle Managem	nent (TBM) C4I	
<u> </u>	B. Budget Activity Justification The TBMCS effort is post Milestone III effort, and is in Budget Activity 7, Operational Systems Development because it incrementally upgrades and develops capabilities for currently operational systems.	Activity 7, Operational Systems Developm	ent because it incren	nentally upgrades and dev	velops
3	C. Program Change Summary (\$ in Thousands)	0001 783	0000	1000 XI	E
5	Previous President's Budget (FY 2000 PBR)	FY 1999 30,254 30,705	43,727	FY 2001 41,433	TBD TBD
3	Adjustments to Appropriated Value	10.00	77,00		
	a. Congressional/General Reductions b. Small Business Innovative Research	-538 -857	-130		
	c. Omnibus or Other Above Threshold Reprogram	14,228	-191		
	d. Below Threshold Reprogram	4,971			
	e. Kescissions f. Other	-271			TRD
99	Adjustments to Budget Years Since FY 2000 PBR	3.5	46 406	-365	CAT
9	Callell Backet Suching 1 2001 1 Div	C7 C'61	70,100	1,000	חמו
9	Significant Program Changes: FY99: \$2.475M of the below threshhold reprogramming action was for EFX'99 initivative where TBMCS is the CORE Operating System. \$.806M of the BTR was to mitigate TBMCS contract cost overruns. The \$14.228M ATR was for Y2K conversion activities.	was for EFX'99 initivative where TBMCS was for Y2K conversion activities.	is the CORE Operat	ing System. \$.806M of th	he BTR was to
		Page 2 of 20 Pages		Exhibit R-2 (PE 0207438F)	E 0207438F)

	RDT&E	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	STIFIC/	ATION S	SHEET (R-2A E	xhibit)		DATE	February 2000	y 2000
8UD(07	вирдет астилту 07 - Operational System Development	m Development			PE NUMBER 0207438	PE NUMBER AND TITLE 0207438F Theat	PE NUMBER AND TITLE 0207438F Theater Battle Management (TBM) C4I	Manage	ment (TB	M) C41	PROJECT 673330
	COST (\$ in Thousands)	ousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
673330	30 Cmd Cntrol Info Process Sys (C2IPS)	s Sys (C2IPS)	9,933	11,644	9,274	2,195	2,314	0	0	0	55,654
<u>5</u>	A. Mission Description The Command & Control Information Processi of the Air Mobility Command (AMC). C2IPS execution worldwide. The integration of C2IPr media will result in a unified AMC C2 System.	A. Mission Description The Command & Control Information Processing System (C2IPS) project develops communications and information processing hardware and software for all echelons of the Air Mobility Command (AMC). C2IPS provides AMC the capability to monitor in real-time the operational airlift and tanker functions associated with mission execution worldwide. The integration of C2IPS computer resources and software with improved High Frequency (HF) equipment and other available communications media will result in a unified AMC C2 System.	stem (C2IPS les AMC the puter resourc) project dev capability ti	'elops comr o monitor in vare with im	nunications areal-time th	ind informat e operationa i Frequency	ion processi Il airlift and (HF) equipr	ng hardware tanker funct nent and oth	e and softwar ions associate er available o	tem (C2IPS) project develops communications and information processing hardware and software for all echelons ss AMC the capability to monitor in real-time the operational airlift and tanker functions associated with mission uter resources and software with improved High Frequency (HF) equipment and other available communications
33333	EY 1999 (\$ in Thousands) \$5,535 Cor \$4,198 Cor \$200 Star \$9,933 Tot	ids) Completed C/S software and evaluation (3A/3B/3C) Continued increment 4 (Detailed Planning & Scheduling for integration of AMC Aircraft Schedules) Started requirements planning for client server architecture Total	valuation (3. ed Planning for client ser	'aluation (3A/3B/3C) cd Planning & Scheduling fo for client server architecture	ig for integra ture	ation of AM	C Aircraft S	chedules)			
55555	EY 2000 (\$ in Thousands) \$9,532 Cor \$1,912 Star \$200 Cor \$11,644 Tot	 Idea Increment 4 (Detailed Planning & Scheduling for integration of AMC Aircraft Schedules) Start next level DII/COE integration Continue requirements planning for future C2IPS architecture migration Total 	d Planning 8 ration ng for future	z Scheduling C2IPS arch	g for integrat itecture mig	ion of AMC ration	Aircraft Sc	hedules)			
55555	FY 2001 (\$ in Thousands) \$7,175 Cor \$1,900 Cor \$199 Cor	nds) Continue Increment 4 (Detailed Planning & Scheduling Continue higher level integration of C2IPS in DII/COE Continue requirements planning for future C2IPS archi Total		c Scheduling in DII/COE C2IPS arch	Planning & Scheduling for integration of nof C2IPS in DIJ/COE g for future C2IPS architecture migration	ion of AMC ration	Planning & Scheduling for integration of AMC aircraft schedules) n of C2IPS in DII/COE g for future C2IPS architecture migration	edules)			
<u> </u>	B. Project Change Summary N/A	nary									
Р	Project 673330	:		Page	Page 3 of 20 Pages	Ş			Ä	hibit R-2A (I	Exhibit R-2A (PE 0207438F)
					1150						

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	I JUSTIFI	CATION	SHEET (R-2A Ext	nibit)		DATE Februa	February 2000
8UD 07.	вирсет астіліту 07 - Operational System Development			PE NUMBER AND TITLE 0207438F Theat	AND TITLE F Theater	Battle Mar	nagemen	PE NUMBER AND TITLE 0207438F Theater Battle Management (TBM) C4I	PROJECT 673330
<u>(</u>	C. Other Program Funding Summary (\$ in Thousands) EY 1999 FY 2000 Actual Estimate	Thousands) EY 2000 Estimate	EY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	EY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
99	AF RDT&E Other APPN								
9	D. Acquisition Strategy The C2IPS will be developed and installed in four increments. A spiral development process is used to produce consecutive software releases within each increment. The first three increments were developed under contract with Computer Sciences Corporation. Increment 1 provided a digital data message handling capability at each Information Processing System (IPS) node and implements mission execution monitoring. Increment 2 builds on Increment 1 software to support mission planning and scheduling. Increment 3 will provide C2IPS with a client server architecture as part of the system migration efforts. Increment 4 continues the evolutionary acquisition process, using modular development through government wide agency contracts. It also lays the foundation for the migration strategy that will enhance interoperability of C2IPS with TBMCS and achieve required DII/COE integration.	ur increments. r contract with implements mi th a client serv wernment wide	A spiral deve Computer Sci ssion executio er architecture agency contri	ences Corpora ences Corpora n monitoring. as part of the acts. It also la	ss is used to prition. Increment Increment 2 be system migrations, the foundations.	roduce consecunt I provided a uilds on Increnion efforts. Incipation for the mignion for the m	tive software digital data 1 nent 1 softwa rement 4 cor ration strateg	releases within es nessage handling or re to support missi tinues the evolutic y that will enhance	ach increment. capability at each ion planning and nary acquisition e interoperability
<u> </u>	E. Schedule Profile		1	FY 1999 2 3	4	EY 2	EY 2000 2 3 4	-	FY 2001 2 3 4
59999999	Increment 3 Completion Dates Spiral A (Rel 3A) Spiral B (Rel 3B Comm Proc) Spiral C (Rel 3C Data Partitioning) Increment 4 Completion Dates Spiral A (Planning & Sched) Spiral B (Plan & Sched, DII/COE) Note: * Denotes Completed Event; X Denotes Planned	Planned Event	* *	*			×		×
ц	Project 673330		Pago	Page 4 of 20 Pages				Exhibit R-2A (Exhibit R-2A (PE 0207438F)
				1160					

	RDT&E PROGRAM ELEMENT	AM ELE	MENT/PR	PROJECT CO	OST BF	COST BREAKDOWN (R-3)	NN (R-3)		DATE Fe	February 2000	000
900 07	BUDGET ACTIVITY 07 - Operational System Development	evelopme	nt		PE NUMBE 020743	PE NUMBER AND TITLE 0207438F Theater Battle Management (TBM) C41	r Battle M	anageme	nt (TBM) (PROJECT 673330
(J)	A. Project Cost Breakdown (\$ in Thousands)	in Thousand	(SI								
Œ	Maior Product Develonment Contracts	ntracte					FY 1999 7 281	7.281	EY 2000	ହା ଚ	EY 2001
99		THE					, ',	7, <u>2</u> 61 2,161	2,100	· ~	1,657
3							•	491	531		193
9							6	9,933	11,644	₹	9,274
9	B. Budget Acquisition History and Planning Information (\$ in Thousands)	and Plannin	g Information	(\$ in Thousand	ଜ						
9	Performing Organizations:										
	⊢q	Contract	,	,							
	+±1	Method/Type	Award or	<u>Performing</u>	Project			,		,	
	Performing or	or Funding Vebicle	Obligation Data	Activity	Office	Total Prior	Budget EV 1000	Budget EV 2000	Budget EV 2001	Budget to	Total
	Develonment Organiz	arama ious	Aupa	707	A CO	W F I 1777	F 1 1992	L 1 2000	F 1 2001	Complete	riogiam
	CSC	FPIF	Dec 88	TBD	TBD	13,847	3,904	1,271		1,724	20,746
	Unisys	IDIQ	Dec 98	TBD	TBD	0	3,377	7,829	7,424	0	18,630
	Support and Management Organizations	izations									
	MITRE	T&M	Oct 94	N/A	N/A	4,533	1,487	1,178	1,178	1,658	10,034
		Various	Various	N/A	N/A	996	674	835	479	725	3,679
	ESC (government n/a	~ca	n/a	N/A	N/A	1,048	491	531	193	302	2,565
	organization)										
	Test and Evaluation Organizations	<u>su</u>									
	77/17					Total Prior	Budget	Budget	Budget	Budget to	Total
	Subtotals					to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
	Subtotal Product Development					13,847	7,281	9,100	7,424	1,724	39,376
	Subtotal Support and Management	int				6,547	2,652	2,544	1,850	2,685	16,278
	Subtotal Test and Evaluation										
	Total Project					20,394	9,933	11,644	9,274	4,409	55,654
	Project 673330			Page	Page 5 of 20 Pages	šes			Exhibi	Exhibit R-3 (PE 0207438F)	207438F)

	RDT&	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	STIFIC/	NOIT	SHEET (R-2A E	xhibit)		DATE	February 2000	ry 2000
BUD	BUDGET ACTIVITY				PE NUMBER	PE NUMBER AND TITLE		:			PROJECT
<u>'</u>	Operational Sy	- Operational System Development			020/438	ir Ineat	er Battle	Manage	020/438F neater Battle Management (1BM) C41	SM) C41	6/428/
	COST (\$	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
674287		Contingency Theater Automated Planning System (CTAPS)	34,545	0	0	0	0	0	0	0	104,634
Note 4790	Note: With the fielding of 4790, TBMCS.	Note: With the fielding of TBMCS 1.0.1 in FY00, CTAPS 4790, TBMCS.	functionality	will be int	egrated in TI	3MCS and f	urther evolu	tion of this f	untionality v	will be mana	unctionality will be integrated in TBMCS and further evolution of this funtionality will be managed under project
9	A. Mission Description The Contingency Theate execution of the theater a Allied command and cor systems.	A. Mission Description The Contingency Theater Automated Planning System (CTAPS) program directly supports the Joint Forces Air Component Commander (JFACC) in the planning and execution of the theater air campaign down to the unit level. The system is designed to an open system standard, promoting interoperability among USAF, Services, an Allied command and control systems. The air tasking order generation and dissemination capabilities of CTAPS are the standard for all DoD command and control systems.		orogram dir system is d ation and d	ectly suppor esigned to ar issemination	ts the Joint I copen syster capabilities	Forces Air C n standard, I of CTAPS &	omponent C promoting ir are the stand	commander (nteroperabili: ard for all D	(CTAPS) program directly supports the Joint Forces Air Component Commander (JFACC) in the planning a level. The system is designed to an open system standard, promoting interoperability among USAF, Services order generation and dissemination capabilities of CTAPS are the standard for all DoD command and control	(CTAPS) program directly supports the Joint Forces Air Component Commander (JFACC) in the planning and level. The system is designed to an open system standard, promoting interoperability among USAF, Services, and order generation and dissemination capabilities of CTAPS are the standard for all DoD command and control
233333	EY 1999 (\$ in Thousands) \$27,033 Cor \$2,722 Cor \$1,100 Cor \$1,425 Sys \$2,265 Exp	continued TBMCS software version 1.0.1 development. Continued TBMCS v1.1 development. Completed development of new ATO format. System engineering and support. Expeditionary Force Experiment Total	ersion 1.0.1 opment. w ATO form rt. nt	developmeı at.	넕						
555	FY 2000 (\$ in Thousands) \$0 No \$0 Tot	iands) No further funding in this project. Further evolution of this functionality continues under project 4790, TBMCS. Total	ect. Further	evolution o	f this functio	nality contir	nes under p	roject 4790,	TBMCS.		
999	EY 2001 (\$ in Thousands) \$0 No \$0 Tot	iands) No further funding in this project. Further evolution of this functionality continues under project 4790, TBMCS. Total	ect. Further	evolution o	f this functio	nality contir	nes under p	roject 4790,	TBMCS.		
ව	B. Project Change Summary	<u>Summary</u>									
<u>G</u>	Project 674287			Page	Page 6 of 20 Pages	Š			Ē	hibit R-2A (Exhibit R-2A (PE 0207438F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	JUSTIFI	CATION	SHEET (R-2A Ext	lbit)		DATE Fe	February 2000	000
900 04	вирсет астіvіту 07 - Operational System Development			PE NUMBER AND TITLE 0207438F Theat	AND TITLE F Theater	PE NUMBER AND TITLE 0207438F Theater Battle Management (TBM) C4I	nagemen	t (TBM) (14.	PROJECT 674287
<u>(c)</u>	(U) C. Other Program Funding Summary (S in Thousands) FY 1999 FY 2000	housands) FX 2000 Estimate	FY 2001 Estimate	FY 2002 Estimata	FY 2003	FY 2004	FY 2005	Cost to	Cost to	Total Cost
99	AF RDT&E Other APPN See Other Program Funding Summary under program funding for CTAPS and WCCS in FY99 to provide a consolidated view of other program funding associated with the TBMCS program.	ject 4790, TBI	MCS. The sur	mmary under 4	790 includes (1.	other program	funding for (TAPS and V	WCCS in F	Y99 to
9	D. Acquisition Strategy Electronic Systems Center (ESC), Hanscom AFB, MA manages the TBMCS program, including CTAPS. Lockheed-Martin Mission Systems (LMMS) was competitively selected after full and open competition. They were awarded a cost plus award fee contract to develop improved capabilities in support of effective. Theater Battle Management and to integrate existing capabilities in the DII Common Operating Environment. The program uses an evolutionary acquisition strategy with a series of incremental software releases. This approach accommodates refinement and prioritization of user requirements and improves adaptability to improvements in commercial technology.	3, MA manage tition. They w ting capabilitio	ss the TBMCS rere awarded a es in the DII C imodates refin	i program, incli 1 cost plus awa common Opera 1ement and pric	uding CTAPS. rd fee contracting Environn	manages the TBMCS program, including CTAPS. Lockheed-Martin Mission Systems (LMMS) was They were awarded a cost plus award fee contract to develop improved capabilities in support of effective pabilities in the DII Common Operating Environment. The program uses an evolutionary acquisition strate, accommodates refinement and prioritization of user requirements and improves adaptability to improvem	artin Missior proved capal ram uses an e nts and impro	Systems (Loilities in supersolutionary)	MMS) was pport of eff acquisition illity to imp	ective strategy with rovements in
<u> </u>	E. Schedule Profile		-	FY 1999 2 3	4	EY 2	FY 2000 2 3 4	-	FY 2001	11 3 4
555555	TBMCS software Version 1.0.1 In-Plant Test Version 1.0.1 Release TBMCS software Version 1.1 In-Plant Test Version 1.1 Release Note: * Denotes Completed Event; X Denotes Planned	lanned Event		n N		· ×			v ×	† n ×
_	Project 674287		Page	Page 7 of 20 Pages				Exhibit F	3-2A (PE)	Exhibit R-2A (PE 0207438F)

	RDT&E PROGRAM ELEMENT	RAM ELE		I/PROJECT C	OST BF	COST BREAKDOWN (R-3)	VN (R-3)		DATE Fe	February 2000	00
900 07 -	вирсет астииту 07 - Operational System Development	Developme	nt		PE NUMBER AN 0207438F	PE NUMBER AND TITLE 0207438F Theate	r Battle M	⊌D मात∟ Theater Battle Management (TBM) C4I	nt (TBM) (PROJECT 674287
(n)	A. Project Cost Breakdown (\$ in Thousands)	(\$ in Thousan	ds)				FV 1000	000	EV 2000	Ç	FV 2001
555	System Integration and Development System Engineering and Support Total	lopment port					33, 1,4,5	33,120 1,425 34,545	0	g	0
3	B. Budget Acquisition History and Planning Information (\$ in Thousands)	ry and Plannin	<u>g Information</u>	ı (S in Thousanı	ds						
9	Performing Organizations:										
,	Contractor or	Contract									
	Government Performing	Method/Type or Funding	Award or Obligation	Performing Activity	Project Office	Total Prior	Budget	Budget	Budget	Budget to	Total
	Activity	Vehicle	Date	EAC	EAC	to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
	Product Development Organizations	zations	i (i i	i i					•	
	LMMS SAIC (S/W/ INT) Hamnton	CPAF	Oct 95 Mar 94	TBD V/A	TBD N/A	31,307	31,946			o c	63,253
	VA			4	4 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	200,111				•	
	SAIC (ASOC/BSD) Hampton CPFF	ıCPFF	Feb 94	N/A	N/A	3,759				0	3,759
	VA, Anchorage AK										
	PARAMAX (APS) St Paul	CPFF	Mar 94	N/A	N/A	1,207				0	1,207
	MN										
	\sim	CPFF	Oct 94	N/A	N/A	2,043				0	2,043
	an Pedro, CA	CPFF	Jun 94	N/A	N/A	6,160	1,100			0	7,260
	Miscellaneous	Various	Various	N/A	N/A	410				0	410
	Support and Management Organizations	anizations	(,	,		i i			Ó	t
	MITRE	CPAF	Oct 94	A/N	A/N	6,948	202			-	7,450
	I EMS	I &IMI	various	N/A	Y/Y	5,910	723)	4,033
	Miscellaneous	Various	Various	N/A	N/A	2,978				0	2,978
	Test and Evaluation Organizations	tions		****	7/14	i c	i			c	Č
	46 IS	Project Order	Various	N/A	K/Z	202	4/			O (6/7
	JTIC	MIPR	Various	N/A	N/A	11				0	77
۵	Project 674287			Рад	Page & of 20 Pages	Set			Exhibi	Exhihit R.3 (PF 0207438E)	07438E)
	10]=01 01 4201			1 ag	50 01 20 1 4	ges				מואב או ה	1001

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BREAKDOW	/N (R-3)		DATE Fe l	February 2000	•
BUDGET ACTIVITY	PE NUMBER AND TITLE				, E	PROJECT
07 - Operational System Development	0207438F Theater Battle Management (TBM) C4I	· Battle Ma	ınagemer	t (TBM) C		674287
Sietotdis	Total Prior	Budget FV 1999	Budget FY 2000	Budget FY 2001	Budget to	Total Program
Subtotal Product Development	55.971	33.046	7	**************************************	0 0	89.017
Subtotal Support and Management	13,836	1,425			0	15,261
Subtotal Test and Evaluation	282	74			0	356
Total Project	70,089	34,545			0	104,634
Project 674287	Page 9 of 20 Pages			Exhibit	Exhibit R-3 (PE 0207438F)	7438F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	STIFIC,	ATION S	энеет (R-2A E	xhibit)		DATE	February 2000	y 2000
8UD 07	BUDGET ACTIVITY 07 - Operational System Development			PE NUMBER AND TITLE 0207438F Theat	RAND TITLE	PE NUMBER AND TITLE 0207438F Theater Battle Management (TBM) C41	Manage	nent (TB	3M) C4I	PROJECT 674288
	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
674288	288 Wing C2 System (WCCS)	3,847	0	0	0	0	0	0	0	19,975
Note 479(Note: With the fielding of TBMCS 1.0.1 in FY00, WCCS functionality will be integrated in TBMCS and further evolution of this functionality will be managed under project 4790, TMBCS	unctionality	will be integ	grated in TBl	MCS and fu	rther evoluti	on of this fu	nctionality v	will be manag	ed under project
3	(U) A. Mission Description This project includes development of mission critical amplication software for WCCS operating on commercially available hardware and system software. Wing	annlication	software for	WCCS oner	ating on cor	nmercially a	wailahle har	dware and c	vetem coffixa	re Wing
	commanders require an accurate, composite picture of their wing's total resources to effectively command, control, and manage their forces in support of their combat	f their wing'	s total resour	rces to effect	tively comm	and, control	, and manag	e their force	ssican soliwa ss in support c	of their combat
	sortie generation and reporting responsibilities. Key functional areas (operations, maintenance, mission planning, intelligence, weather, etc.) use WCCS to support the wing commander in the mission execution and reporting process by exchanging critical command and control and intelligence information with functional counterparts	runctional as ing process l	reas (operative) y exchangir	ons, mainter ng critical co	nance, missic	on planning, control and	intelligence intelligence	, weather, el informatior	tc.) use WCC. with functio	s to support the nal counterparts

(U) FY 1999 (\$ in Thousands)

(U) \$2,922 Continued TBMCS software version 1.0 development.
(U) \$299 Continued TBMCS v1.1 development.

adequately meet the needs of today's air operations. The WCCS project designs, develops, and installs an automated, standard wing-level C2 system that will be tailored

to meet unique organizational requirements, provide interoperability, and reduce training and maintenance costs.

compromise, and involve duplication of effort. Disparate programs have led to the proliferation of stovepipe systems which can not provide interoperability and do not

information is still relayed over secure and unsecured telephones, radios, and other communications devices, as well as by runners to update multi-user status displays (grease boards) or hand written logs. These techniques have not changed substantially since World War II, and are cumbersome, error-prone, are subject to security

an automated C2 system to bring meaningful, consolidated information to the Commander in near real-time. At many wings not yet upgraded with WCCS this

located throughout the wing. The introduction of increasingly sophisticated weapon systems - with their need for and ability to produce large amounts of data - require

(U) \$299 Continued TBMCS v1.1 developn (U) \$626 Systems engineering and support.

(U) \$3,847 Total

(U) FX 2000 (\$ in Thousands) (U) \$0 No f

No further funding in this project. Further evolution of this functionality continues under project 4790, TBMCS.

(U) \$0 Total

(U) FY 2001 (\$ in Thousands)

No further funding in this project. Further evolution of this functionality continues under project 4790, TBMCS.

\$0 To

Page 10 of 20 Pages **Project 674288**

1166

Exhibit R-2A (PE 0207438F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	TION SHE	ET (R-2A Ext	hibit)	DATE	TE February 2000	y 2000
800 01	вирсет аститу 07 - Operational System Development	PE N. 020 7	PE NUMBER AND TITLE 0207438F Theater Battle Management (TBM) C4I	Battle Man	nagement (TBM) C4I	PROJECT 674288
3	B. Project Change Summary						
<u>e</u>	C. Other Program Funding Summary (\$ in Thousands) FY 1999 FY 2000 Actual Estimate	FY 2001 FY 2002 Estimate Estimate	002 FY 2003 nate Estimate	FY 2004 Estimate	FY 2005 Estimate	Complete	Total Cost
99	proje 1 fund	The summary uth the TBMCS pi	ınder 4790 includes ı rogram.	other program fi	unding for CTA	APS and WCCS i	n FY99 to
ව්	D. Acquisition Strategy Electronic Systems Center (ESC), Hanscom AFB, MA manages the TBMCS program, including WCCS. Lockheed-Martin Mission Systems (LMMS) was competitively selected after full and open competition. They were awarded a cost plus award fee contract to develop improved capabilities in support of effective Theater Battle Management and to integrate existing capabilities in the DII Common Operating Environment. The program uses an evolutionary acquisition strategy with a series of incremental software releases. This approach accommodates refinement and prioritization of user requirements and improves adaptability to improvements in commercial technology.	TBMCS progran plus award fee co on Operating Env nent and prioritiz	n, including WCCS. ontract to develop in rironment. The progr zation of user require	Lockheed-Mar nproved capabili ram uses an evol	rtin Mission Systities in support lutionary acquis roves adaptabili	stems (LMMS) v of effective Thea sition strategy wi ity to improveme	as competitively ter Battle th a series of nts in
<u> </u>	E. Schedule Profile	1 EX	FY 1999	FY 2000	000 3	EX 1	FY 2001
56666	TBMCS software Version 1.0.1 In-Plant Test Version 1.0.1 Release TBMCS software Version 1.1 In-Plant Test Version 1.1 Release Note: * Denotes Completed Event; X Denotes Planned Event	•		· ×		· ×	
E	Project 674288	Page 11 of 20 Pages	0 Pages			Exhibit R-2A (PE 0207438F)	E 0207438F)
		1169					

	RDT&E PROGRAM ELEMENT	M ELE	MENT/P	/PROJECT C	SOST BI	COST BREAKDOWN (R-3)	VN (R-3)		DATE F.	February 2000	G
BUE 07	GET ACT	elopme			PE NUMBER AN 0207438F	PE NUMBER AND TITLE 0207438F Theate	r Battle M	мотпе Theater Battle Management (TBM) С4I	nt (TBM) (PROJECT 674288
(c)	A. Project Cost Breakdown (\$ in Thousands)	Thousand	(SI				EV 1000	000	000C A3	ç	EV 2001
565	System Integration and Development Systems Engineering and Support Total	ent						3,221 626 3,847		3000	0 0 0
<u>e</u>		nd Plannin	g Informatio	ın (\$ in Thousan	(sp		î		•)
3	Performing Organizations:										
,	Contractor or	Contract Method/Tyne	Award or	Performing	Project						
		or Funding	Obligation	Activity	Office	Total Prior	Budget	Budget	Budget	Budget to	Total
	Activity Vehicle Product Develonment Organizations	icle ns	Date	EAC	EAC	to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
	LMMS CPAF	14	Oct 95	TBD	TBD	8,300	3,221			0	11,521
	SAIC CPFF	Ŧ	Jan 94	N/A	N/A	2,000				0	5,000
	Support and Management Organizations	ations									
	MITRE CPAF	Ħ	Oct 94	N/A	N/A	1,106	215			0	1,321
	TEMS & Misc Various	ious	Various	N/A	N/A	1,594	411			0	2,005
	Test and Evaluation Organizations N/A										
9	Government Furnished Property:	:1									
	•	tract									
	Meth Ifem or Fu	Method/1ype or Funding	Award or Obligation	Delivery		Total Prior	Budget	Budget	Budget	Budget to	Total
	ription	icle	Date	Date		to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
	pment Propert										
	Local Purchase Various Support and Management Property	ious /	Various	Various		128				0	128
	N/A										
	Project 674288			Page	Page 12 of 20 Pages	ıges			Exhibi	Exhibit R-3 (PE 0207438F)	207438F)

December RDT&E PROGRAM ELEMENT/PRO	/PROJECT COST BREAKDOWN (R-3)	NN (R-3)		DATE Fet	February 2000		
Construent Furnished Property Continued: Ices and Evaluation Property Ices and Evaluation UDGET ACTIVITY I 7 - Operational System Development	PE NUMBER AND TITLE 0207438F Theate	r Battle Man∂	agemen	t (TBM) C		ојест 4288	
Conf Prior Budgest B							
16,128 3,847 0 16,128 Exhibit R-3 (PE 02074	Subtotals Subtotal Product Development Subtotal Support and Management	Total Prior to FY 1999 13,428 2,700		Budget X 2000	Budget FY 2001	Budget to Complete 0	Total Program 16,649 3,326
Page 13 of 20 Pages	Subtotal 1 est and Evaluation Total Project	16,128	3,847			0	19,975
Page 13 of 20 Pages							
	Project 674288	Page 13 of 20 Pages			Exhibit	R-3 (PE 020	7438F)

	RDT&	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	STIFIC!	TION S	HEET ((R-2A E	xhibit)	i.	DATE	Februa	February 2000
8UD	вирсет Астіміту 07 - Operational Sy	BUDGET ACTIVITY 07 - Operational System Development			PE NUMBEF 0207438	PE NUMBER AND TITLE 0207438F Theat	er Battle	Manage	PE NUMBER AND TITLE 0207438F Theater Battle Management (TBM) C4I	3M) C4I	PROJECT 674790
	COST (\$ i	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
674790		Theater Battle Management Core System (TBMCS)	0	25,799	20,258	17,968	17,526	20,236	20,638	Continuing	
Note CTA R&L	Starting in FY00 the PS, WCCS and CIS w funding was also tran	Note: Starting in FY00 the RDT&E funding for CTAPS (4287), WCCS (4288), and CIS (27414F, 4773) will be combined in PE 27438F under project 4790, TBMCS. CTAPS, WCCS and CIS will be integrated in a single DII/COE compliant system and will be managed as a single project with the fielding of TBMCS 1.0.1 in FY00. NATO R&D funding was also transferred to this project in FY00 and FY 01.	287), WCCS OE complia	(4288), and nt system an	CIS (27414) d will be m	4F, 4773) w lanaged as a	ill be combir single proje	ned in PE 27 ct with the f	438F under ielding of TI	project 4790 3MCS 1.0.1	, TBMCS. in FY00. NATO
ව	A. Mission Description The Theater Battle Mans Information Infrastructus system for planning and Joint Forces Air Compor Command & Control Sy interoperability between	A. Mission Description The Theater Battle Management Core Systems (TBMCS) develops force-level and wing-level command, control, and intelligence systems which utilize DoD's Defense Information Infrastructure (DII) common operating environment (COE). It links planning, intelligence and operations functions in an integrated battle management system for planning and executing the air war at the theater level. Functions supported include generation and dissemination of the air tasking order in support of the Joint Forces Air Component Commander (JFACC). Projects being integrated in TBMCS include the Contingency Theater Automated Planning System (CTAPS), Wing Command & Control System (WCCS), and Combat Intelligence System (CIS). Funds were added in FY00 and FY01 for NATO R&D to collectively enhance interoperability between the emerging NATO Air Command and Control System (ACCS) and TBMCS, and to share relevant research.	(CS) develop nvironment (heater level. Projects bein ntelligence S mmand and (ss force-level (COE). It lin Functions ss g integrated system (CIS) Control Syste	l and wing-l ks planning upported in in TBMCS . Funds we	level comm; ;, intelligent clude generi include the re added in	and, control, se and operat ation and diss Contingency FY00 and F.	and intelligations function semination of Theater Au Y01 for NA re relevant	ence systems in an inte of the air tasl itomated Pla TO R&D to research.	s which utiliz grated battle king order in unning Syster collectively	re DoD's Defense management support of the n (CTAPS), Wing enhance
999	EY 1999 (\$ in Thousands) \$0 Fun \$0 Tot	ands) Funds were reflected under CTAPS (4287), WCCS (4288), and CIS (PE 27414F, 4773) Total	.APS (4287),	, WCCS (42)	88), and CI!	S (PE 27414	IF, 4773)				
9999999	EY 2000 (\$ in Thousands) \$4,700 TB \$15,559 Cor \$2,240 Star \$1,000 NA \$2,300 Sys \$25,799 Tot	TBMCS software version 1.0.2 development. Continue TBMCS software version 1.1 development. Start TBMCS software version 2.0 development NATO R&D System Engineering Total	developmersion 1.1 dev 2.0 develop	nt. elopment. ment							
99999	EY 2001 (\$ in Thousands) \$10,292 Cor \$6,166 Cor \$1,500 NA \$2,300 Sys	ands) Complete TBMCS software version 1.1 development Continue TBMCS software version 2.0 development NATO R&D System Engineering	rsion 1.1 dev rsion 2.0 dev	velopment velopment							
_	Project 674790			Page 1	Page 14 of 20 Pages	es			Ē	hibit R-2A (Exhibit R-2A (PE 0207438F)

	POT & E BIIDGET ITEM IIISTIEICATION SHEET (P-2A E-bibie)	Mati.		NOITA	CHEET /C	2-24 Evh	jbit)	à	DATE	9000
	ואם שומיו					TEN LAIN	(1)		repruary zooo	y 2000
BUE 07	BUDGET ACTIVITY 07 - Operational System Development	pment			PE NUMBER AND TITLE 0207438F Theat	AND TITLE Theater	Battle Mar	ND TITLE Theater Battle Management (TBM) C4	(TBM) C4I	PROJECT 674790
9	A. Mission Description Continued									
<u> </u>	FY 2001 (\$ in Thousands) Continued \$20,258									
9	B. Project Change Summary									
<u>(a)</u>	C. Other Program Funding Summa E)	nary (\$ in Th FY 1999 Actual	lousands) EY 2000 Estimate	FY 2001 Estimate	EY 2002 Estimate	FY 2003 Estimate	EY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
96	AF RDT&E Other APPN									
<u>3</u>		0	17,648							17,648
9	2/438F, WSC 834520	79,882	47,150	51,844	55,600	54,704	55,880	56,896	Continuing	TBD
9	RDT&E, AF PE 0207414F, CIS	13,635	0	0	0	0	0	0	0	21,754
<u>5</u>	Other Procurement, AF, PE 0207414F, WSC 832010,	12,439	0	0	0	0	0	0	0	23,610
	Intelligence Data Handling System, Combat Intelligence System portion									
9	Other Procurement, AF, PE 0207431F, WSC 832010, Intelligence Data Handling System, Combat Intelligence System nortion	2,858	4,650	0	0	0	0	0	Continuing	
	Note: This summary includes other program funding associated with CTAPS, WCCS, and CIS in FY99 to provide a consolidated view of other program funding associated with the TBMCS program. Please note, the other program funds associated with PEs 0207414F and 0207431F in FY99 are reported both here and as other program funds under the descriptive summary for PE 0207414F, Combat Intelligence System.	ogram fun Please not ımmary fo	ding associate e, the other pr r PE 0207414.	ed with CTAP! rogram funds a F, Combat Inte	S, WCCS, and associated with elligence System	CIS in FY99 to PEs 02074141 m.	o provide a co. F and 0207431	nsolidated viev IF in FY99 are	w of other program reported both her	n funding e and as other
	Project 674790			Page	Page 15 of 20 Pages				Exhibit R-2A (PE 0207438F)	PE 0207438F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 2000
BUC 07	вирсет астилту 07 - Operational System Development	PENUMBER AND TITLE 0207438F Theater Battle Management (TBM) C4I	PROJECT (TBM) C4I 674790
<u> </u>	D. Acquisition Strategy Electronic Systems Center (ESC), Hanscom AFB, MA 1 and open competition. They were awarded a cost plus a integrate existing capabilities in the DII Common Opers releases. This approach accommodates refinement and	manages the TBMCS program. Lockheed-Martin Mission Systems (LMMS) was competitively selected after full iward fee contract to develop improved capabilities in support of effective Theater Battle Management and to iting Environment. The program uses an evolutionary acquisition strategy with a series of incremental software prioritization of user requirements and improves adaptability to improvements in commercial technology.	was competitively selected after feater Battle Management and to the a series of incremental software. S in commercial technology.
<u>e</u>	E. Schedule Profile	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\frac{\text{FY 2001}}{1}$
5555555	In-Plant Test Version 1.0.1 Release TBMCS software version 1.0.2 In-Plant Test Version 1.0.2 Release TBMCS software version 1.1 In-Plant Test Version 1.1 Release Note: * Denotes Completed Event; X Denotes Planned Event	* *	
	Project 674790	Page 16 of 20 Pages	Exhibit R-2A (PE 0207438F)

	RDT&E PROGRAM ELEMENT		/PROJECT C	OST BF	COST BREAKDOWN (R-3)	WN (R-3)		DATE F ¢	February 2000	000
BUDG 07 -	вирдет астіvіту 07 - Operational System Development	int		PE NUMBER AN 0207438F	PE NUMBER AND TITLE 0207438F Theate	r Battle M	⊌D ਸਾ⊓∟E Theater Battle Management (TBM) C4l	nt (TBM)	C4I	РКОЈЕСТ 674790
(<u>n</u>)	A. Project Cost Breakdown (\$ in Thousands)	(sp)				EV 1000	000	EV 200	9	100C XI
599	System Integration and Development System Engineering and Support						0 0	23,499 23,499 2,300 25,799	3608	17,958 17,958 2,300 20,258
<u>e</u>	B. Budget Acquisition History and Planning Information (\$ in Thousands)	ng Information (S in Thousand	ଉ			,		<u>.</u>	1,01
9	Performing Organizations;									
,	Contractor or Contract Government Method/Type	Award or	Performing	Project						
	Performing or Funding Activity Vehicle	<u>Obligation</u> Date	Activity	Office FAC	Total Prior	Budget FV 1999	Budget FV 2000	Budget FV 2001	Budget to	Total
	Development Organiz									
	LMMS CPAF	Oct 95	TBD	TBD			23,369	17,828	Continuing	TBD
	Support and Management Organizations MITRE	Oct 94	A/Z	A/N			2 300	2 300	Continuing	TRD
	l Evaluation Organizat		1	•)) (î		
	46TS Project Order	Various	N/A	N/A			130	130	Continuing	TBD
	Subtotals				Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	. H
	Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation						23,369 2,300 130	17,828 2,300 130	TBD TBD CBT	TBD TBD
	Total Project						25,799	20,258	TBD	
ď	Project 674790		Page	Page 17 of 20 Pages	ges			Exhib	Exhibit R-3 (PE 0207438F))207438F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	JSTIFIC,	ATION 8	SHEET (R-2A E	xhibit)		DATE	February 2000	y 2000
BUDG 07 -	вирсет астилту 07 - Operational System Development			PE NUMBER AND TITLE 0207438F Theat	RAND TITLE	PE NUMBER AND TITLE 0207438F Theater Battle Management (TBM) C4I	Manage	ment (TE	3M) C4I	PROJECT 674802
	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
674802)2 Deliberate and Crisis Action Planning and Execution Segment (DCAPES)	0	8,963	11,536	12,225	10,279	10,485	10,693	Continuing	TBD
DCA	DCAPES funding in FY99 was under PE 33150F, project 4667.	4667.								
3	A. Mission Description Deliberate and Crisis Action Planning and Execution Segments (DCAPES)are being developed as the next generation AF interface to the Joint Operational Planning and Execution System (JOPES). This effort is an evolutionary follow on to the Contingency Operations Mobility Planning and Execution System (COMPES), which is currently the Air Force interface to JOPES. COMPES is the legacy system ported from WWMCCS to GCCS in 1996 as a stop gap measure. DCAPES will replace the functionality of COMPES with modern relational databases, integrated-distributed database, and common and shared data consistent with the Joint vision for integrated C2. DCAPES is intended to be more tightly coupled with the range of planning support systems to provide a more effective crisis action planning capability for a wider range of operational scenarios. DCAPES provides a real time, two way interchange of manpower, logisites, and operational data between the Air Force and the warfighting CINCs. It matches people and airframes/weapons to the CINC's warfighting requirements.	n Segments (I ionary follow ES is the legs trabases, integ I with the ran I real time, twestweapons to	OCAPES)arron to the C cry system prated-distril ge of planni o way intercute CINC's	e being deve ontingency (oorted from V buted databa: ng support s; change of ms	loped as the Operations IN WWMCCS tee, and coming steems to pring impower, logging requirements	next genera Abbility Plar o GCCS in mon and sha ovide a mor	tion AF inte ming and Ex 1996 as a stc red data con e effective c perational d	rface to the cecution Sys pagap measi sistent with risis action pata between	Joint Operation of Complete Complete Complete Double the Joint vision of Joint vision of The Air Force the Air Force	onal Planning and ES), which is S will replace the on for integrated billity for a wider e and the
<u> </u>	EX 1999 (\$\\$\text{in Thousands}\) \$0 No activity (FY99 funding reflected in PE 0303150F) \$0 Total	flected in PE	0303150F)							
33333	\$5,512 DCAPES Increment 1 development, prototyping, coding, and internal testing \$5,512 DCAPES Increment deployment and test support \$500 Government deployment and test support \$500 DCAPES Increment 2 requirements definition \$2,451 DCAPES Increment 2 development, requirements allocation, prototyping, and coding \$8,963 Total	pment, protol test support ments defini pment, requii	yping, codii ion ements allo	ng, and intern cation, proto	nal testing	coding				
99999	FY 2001 (\$ in Thousands) \$10,637 DCAPES Increment 2 development, prototyping, coding, and testing \$500 Government development testing and integration and interoperability testing \$399 DCAPES Increment 3 requirements definition Total	pment, protol ting and integ ements defini	yping, codii tation and i ion	ng, and testir nteroperabili	ig ty testing					
<u>q</u>	Project 674802		Page	Page 18 of 20 Pages	Se			ΔĬ	thibit R-2A (Exhibit R-2A (PE 0207438F)

	RDT&E BUDGET ITEM JUS	T ITEM JU	ISTIFIC	ATION	TIFICATION SHEET (R-2A Exhibit)	3-2A Exh	libit)		DATE		February 2000	
97 04	виреет астилту 07 - Operational System Development	opment			PE NUMBER AND TITLE 0207438F Theaf	PE NUMBER AND TITLE 0207438F Theater Battle Management (Battle N	Aanagen	nent (TE	TBM) C4I	PROJECT 674802	- 2
9	B. Project Change Summary All funding in project 4802, DCAPES was reported in FY99 under PE 33150F, project 4667. It was transferred to group it with other TBM C4I software development efforts intended to operate in the Defense Information Infrastructure Common Operating Environment.	S was reported i	n FY99 un 1 Infrastruc	der PE 33150] :ture Common	F, project 466.	7. It was trans ıvironment.	sferred to g	roup it with	ı other TB	M C4I softv	vare developme	ınt
<u> </u>	C. Other Program Funding Sumi	nary (\$ in Thous FY 1999 FY	ousands) FY 2000 Estimate	EX 2001 Estimate	EY 2002 Estimate	FY 2003 Estimate	FY 2004	E EY 2005	005 nate	Cost to	Total	Total Cost
999	AF RDT&E Other APPN PE 33150 (RDT&E, 4667, Global Command and Control System - AF)					XIIIII III			A 1800		6	9,122
<u> </u>	D. Acquisition Strategy DCAPES will be managed by Electronic Systems Center, Hanscom AFB, MA. In July 98, the DCAPES contract was awarded to the Raytheon, Computer Sciences Corporation, and Science Applications International team under Command and Control Product Line (CCPL) contracts awarded and maintained by Electronic Systems Center. The program uses an evolutionary acquisition strategy with a series of incremental software releases. This approach accommodates refinement and prioritization of user requirements and improves adaptability to improvements in commercial technology.	onic Systems Cers International to conary acquisition laptability to implementations.	nter, Hansc eam under 1 strategy v 1000 rovements	om AFB, MA Command an vith a series of	In July 98, t d Control Proc f incremental s	the DCAPES of fuct Line (CC software relea	contract wa PL) contrai ses. This a	is awarded cts awarded pproach ac	to the Ray 1 and main commodat	theon, Comitained by Eles refineme	puter Sciences lectronic Syster ant and prioritiz	ns ation
<u>e</u>	E. Schedule Profile				FY 1999		μ.	FY 2000			FY 2001	•
9	Increment 1 Development			- *	2 3	4	1 2	3	4	1 2	3	4
99	Government Acceptance Testing DCAPES Initial Increment Fielded Note: * Denotes Completed Event; X Denotes Planned Event	(Denotes Plann	ed Event					×		×		
	Project 674802			Page	Page 19 of 20 Pages				Ú	xhibit R-2A	Exhibit R-2A (PE 0207438F	(<u>F</u>)

	RDT&F PROGRAM FI FMFN		(PRO IECT COST BREAKDOWN (R-3)	OST BE	PEAKDO!	WN (R-3)		DATE	704	
		- 8	7 1020						rebinaly 2000	000
800 07	BUDGET ACTIVITY 07 - Operational System Development	pment		PE NUMBER AN 0207438F		ID TITLE Theater Battle Management (TBM) C4I	anageme	nt (TBM)		РРОЈЕСТ 674802
(2)	A. Project Cost Breakdown (\$ in Thousands)	ousands)				EV 1000	000	0000 A3	8	EV 2001
(L)	Devisionment Contract Bffort						27	F1 2000	3 €	8 036
9 (> <	600	2 2	0,530
9 (Test Support Program Management Support						o c	300	R	1 400
<u>(B</u>							0 0	300	S 02 :	500
9	10tal Note: DCAPES was previously funded in FY98 under PE 33152F, project 4485 and in FY99 under PE 33150F, project 4667.	d in FY98 under PF	3 33152F, project	1485 and in	Y99 under PE	33150F, proje	0 ect 4667.	8,963	53	11,536
9	B. Budget Acquisition History and Planning Information (S in Thousands)	lanning Informati	on (S in Thousan	ds)						
9	Performing Organizations:									
	.		ć							
	Vovernment Method Lype Performine or Funding	Type Award or ing Obligation	<u>Pertorming</u> Activity	Project Office	Total Prior	Budget	Budget	Budget	Budget to	Total
			EAC	EAC	to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
	Organiz				•		1			
	Kaytheon/ CSC/ SAIC FP/LH with	with Feb 98	N/A	N/A	0		7,263	9,436	Continuing	(IBD
	Support and Management Organizations	্ব হা								
	Mitre						800	800	Continuing	TBD
	TEMS T&M						400	009	Continuing	TBD
	uation Organizat									
	46 Test Sqdn MIPR			;	,		200	700	Continuing	TBD
	Note: DCAPES was previously funded in FY98 under		PE 33152F, project 4485 and in FY99 under PE 33150F, project 4667.	1485 and in 1	Y99 under PE	33150F, proje	ect 4667.		•	į
	2				Total Prior	Budget EV 1000	Budget EV 2000	Budget EV 2001	Budget to	<u>Total</u>
	Subjudgis				0 5 1 1 2 2 2	F1 1222	7900	F Y 2001	Complete	Frogram
	Subtotal Product Development)		,263	9,436	IBD	IBD
	Subtotal Support and Management						1,200	1,400	TBD	TBD
	Subtotal lest and Evaluation				,		200	00/	IBD	1BD
	Total Project				0		8,963	11,536	TBD	TBD
<u> </u>	Project 674802		Расс	Page 20 of 20 Pages	945			T C C	Evhihit R.3 (DE 0207438E)	207438E)
	19901 01 4002		1 48	2700170	ges				71 1/2 /1 E 0.	1004-103

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	USTIFIC	ATION	SHEET	(R-2 Ex	thibit)		DATE	Februa	February 2000
80DC 07 -	вирсет аститу 07 - Operational System Development			PE NUMBER AN 0207581F	PE NUMBER AND TITLE 0207581F JOINT	STARS				PROJECT 670003
	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
670003	03 JSTARS	91,701	147,582	144,118	132,993	167,012	313,925	295,338	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0
5 55555555	A Mission Description There is an Air Force and Army need to provide, from airbome platforms, near-real time surveillance and targeting information on moving and stationary ground targets (growth to maritime operations), slow moving rotary and fried wing aircraft, and rotating antennas. This information enables to perational and tactical commanders to make and execute battle decisions. To meet these needs, the Air Force and Army initiated the Joint Surveillance Target Attack Radar System (Joint STARS) program with the Air Force as lead service. Joint STARS provides target information for pairing direct attack aircraft and standoff weapons against selected targets. The system is capable of being cued by other reconnissance, surveillance, and target acquisition systems; is able to respond rapidly to worldwide contingencies. The operational tilty of the system was effectively demonstrated by the two developmental aircraft in support of combat operations during properational capable of being cued by other reconnissance, surveillance, and target acquisition Board (DAB) Milestone III Review approved fall rate production of a 19 E-8C program. The 93rd Air Control Wing, Robins AFB, GA, declared Joint STARS Initial Operational Capability (IOC) in Dec 95 and the system is now participating in operational flied force from Feb to Inne 99. In Sep 96 the Defense Review recommended a revision of the Joint STARS production profile the Air Force reduced Joint STARS production from 19 to 13 E-8Cs. Funding for 13th E-8C provided during FYOI President's Budget build. EY 1999 (Sin Thousands) Continued work on Block 10 (TADIL-J, JIMIS, and DMS/COTS) Efforts Continued work on Block 40 (Radar Technology Insertion Program (RTIP)); Begin Data Link Study Continued work on Block 40 (Radar Technology Insertion Program (RTIP)); Begin Data Link Study Continued work on Test Efforts Continued work on Test Effor	n airborne platforms and fixed wing airceds, the Air Force an vides target informa veillance, and target the two developmente bec 95 and again fro (DAB) Milestone I ational Capability (I a revision of the Jo I President's Budget (Computer Replacet (SATCOM) Efforts (Radar Technology ystems Development (DII (B)	airborne platforms, near and fixed wing aircraft, at ds, the Air Force and Arrides target information fo eillance, and target acqui he two developmental aircc 95 and again from Nov (DAB) Milestone III Rev tional Capability (IOC) is a revision of the Joint ST President's Budget build. TADIL-J, JIMIS, and DM. Computer Replacement P. SATCOM) Efforts Radar Technology Insertistens Development (DII COE/C	aurborne platforms, near-real time surveillance and targeting informat and fixed wing aircraft, and rotating antennas. This information enable cds, the Air Force and Army initiated the Joint Surveillance Target Attaides target information for pairing direct attack aircraft and standoff weillance, and target acquisition systems; is able to respond rapidly to weillance, and target acquisition systems; is able to respond rapidly to whe two developmental aircraft in support of combat operations during ec 95 and again from Nov to Dec 96. Joint STARS also successfully stonal Capability (IOC) in Dec 97 and the system is now participating a revision of the Joint STARS production profile the Air Force reduce President's Budget build. TADIL-J, JIMIS, and DMS/COTS) Efforts Computer Replacement Program (CRP)) Efforts SATCOM) Efforts Radar Technology Insertion Program (RTIP)); Begin Data Link Study systems Development (DII COE/GCCS Studies)	autennas. T I the Joint Su irect attack and; is able pport of con pport of con . Joint STA red full rate and the system action profill Efforts RP)) Efforts n (RTIP)); E	and targeting his informat urveillance T aircraft and s to respond ra that operatio RS also suc production c m is now pan e the Air Fon	g informatic tion enables l'arget Attac standoff wes apidly to wo ms during D cessfully su of a 19 E-8C tricipating in rce reduced	nairborne platforms, near-real time surveillance and targeting information on moving and stationary ground targ and fixed wing aircraft, and rotating antennas. This information enables operational and tactical commanders to eds, the Air Force and Army initiated the Joint Surveillance Target Attack Radar System (Joint STARS) program ides target information for pairing direct attack aircraft and standoff weapons against selected targets. The systerillance, and target acquisition systems; is able to respond rapidly to worldwide contingencies. The operational the two developmental aircraft in support of combat operations during Desert Storm. Joint STARS aircraft were ee 95 and again from Nov to Dec 96. Joint STARS also successfully supported Operation Allied Force from Fe (DAB) Milestone III Review approved fall rate production of a 19 E-8C program. The 93rd Air Control Wing, artovision of the Joint STARS production profile the Air Force reduced Joint STARS production from 19 to 13 President's Budget build. TADIL-1, JMIS, and DMS/COTS) Efforts Computer Replacement Program (CRP)) Efforts SATCOM) Efforts Radar Technology Insertion Program (RTIP)); Begin Data Link Study study systems Development (DII COE/GCCS Studies)	g and stations and tactical (iem (Joint ST t selected tar tingencies. Joint STAR ration Allied he 93rd Air and training S production	
Ω.	Project 670003		Page	Page 1 of 7 Pages	10			Ш	xhibit R-2 (Exhibit R-2 (PE 0207581F)

	RDT&E BUDGET ITEM JUSTIFICATI	STIFICATION SHEET (R-2 Exhibit)	it)	DATE February 2000	2000
800 07	вирсет астилту 07 - Operational System Development	PE NUMBER AND TITLE 0207581F JOINT STARS	ARS		PROJECT 670003
<u>(2</u>	A. Mission Description Continued				
5	EY 2000 (\$ in Thousands)				
99	Continue Block 30 (SATCOM Continue Block 30 (SATCOM	ts Link 16 ASII DMS COTS DII COE Studies) Efforts			
999	Continue Block 40 (RTIP)		•		
<u>3</u> 9	2 aligned Link	to Block 30.			
5	FY 2001 (\$ in Thousands)				
333	Continue Block 20 (Start Suppor Continue Block 30 (SATCOM,	ort Systems Upgrades for CRP) Efforts DMS COTS, DII COE Studies) Efforts			
333	\$70,714 Continue Block 40 (K11P) Efforts \$32,000 Continue Test Efforts \$144,118 Total				
<u> </u>	B. Budget Activity Justification This program is in Budget Activity 7 - Operational System Development. Initial operational capability was achieved in Dec 97. Developmental work continues on system upgrades.	nt. Initial operational capability was a	achieved in Dec 97	'. Developmental work conti	tinues on
3	C. Program Change Summary (\$ in Thousands)				
ענו	Previous President's Budget (FV 2000 PBR)	FY 1999 100 453	FY 2000 130 488	FY 2001	Total Cost
3	Appropriated Value	101,793	148,488		201
9	Adjustments to Appropriated Value		ų.		•
	a. Congressional/General Reductions b. Small Business Innovative Research	-1,540	c /-		
	c. Omnibus or Other Above Threshold Reprogram		-811		
	d. Below Threshold Reprogram	-5,051			
	e. Rescissions f. Other	-513			
ıι	Project 670003	Page 2 of 7 Pages		Exhibit R-2 (PE 0207581F)	0207581F)

	RDT&E BUDGET ITEM JU	GET ITE		STIFICATION	SHEET	SHEET (R-2 Exhibit)	lbit)	Δ	DATE Februa	February 2000	
8UD 07	вирсет астилту 07 - Operational System Development	velopmen	.		PE NUMBER AND TITLE 0207581F JOIN	AND TITLE F JOINT STARS	TARS			PROJECT 670003	
<u>(5</u>	C. Program Change Summary (\$ in Thousands) Continued	y (\$ in Thousa	nds) Continue	p a		TX 1000	0000 /2:1		1000	C F	1
99	Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR	ince FY 2000 I I PBR	PBR			91,701	147,582		F1 2001 22,419 144,118	TBD	g Q
9	Significant Program Changes:										
9	D. Other Program Funding Summary (\$ in Thousands) FY 1999 FY 2000 Actual Estimate	mmary (S in 7 FY 1999 Actual	Thousands) FY 2000 Estimate	FY 2001 Ferimate	FY 2002 Ferimate	FY 2003 Ferimate	FY 2004 Fertimate	FY 2005 Ferimate	Cost to	Total Cost	ost
9	Aircraft Procurement, AF,	508,887	291,171	260,878	12,183	0	0	0	0	4,434,701	01
9	Modifications, BP11 (PE 27581F)	43,522	28,346	33,389	16,161	13,518	13,572	45,259	Continuing	TBD	Ð
99	Spares, BP16 (PE 27581F) Quantity, Joint STARS E-8C Aircraft Proc.	66,835	73,685	28,824 1	9,546	6,332	2,773	1,535	Continuing	TBD	Ö
9	Note: Procurement began with 2 E-8Cs per year FY93-FY97.										
9	E. Acquisition Strategy Joint STARS Low Rate Initial Production (LRIP) was approved by the Defense Acquisition Board (DAB) in FY93. Acquisition began with the procurement of 2 E-8Cs in FY93, and continued at 2 E-8Cs per year through FY97. Procurement funding continues with 1 E-8C in FY98, 2 E-8Cs in FY99, 1 E-8C in FY00, and currently concludes with one E-8C in FY01.	oduction (LRI Ss per year thro	P) was approv ough FY97. Pr	ed by the Defer	nse Acquisitior ding continues	1 Board (DAB) with 1 E-8C ii) in FY93. Acc n FY98, 2 E-8(quisition begai Cs in FY99, 1	a with the procur E-8C in FY00, a	ement of 2 E-8C nd currently	'n
9	F. Schedule Profile			-	FY 1999	4	FY 2000	,000 3	- 刊~	FY 2001	
999	CRP EMD First Flight RTIP MS II RTIP EMD Contract Award * Denotes completed event			•			· ×				
	Project 670003			Рад	Page 3 of 7 Pages				Exhibit R-2 (Exhibit R-2 (PE 0207581F)	
					0211						

RDT&E BUDGET ITEM JUSTIFICATION	STIFICATION SHEET (R-2 Exhibit)	DATE February 2000
BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0207581F JOINT STARS	PROJECT 670003
(U) F. Schedule Profile Continued	EX 1999 EY 2000	EY 2001
X Denotes planned event	t t	n
Project 670003	Page 4 of 7 Pages	Exhibit R-2 (PE 0207581F)

	RDT&E PROGRAM ELEMENT	RAM ELE		I/PROJECT C	COST BF	BREAKDOWN (R-3)	WN (R-3)		DATE F	February 2000	 8
- 20	вирсет астилту 07 - Operational System Development	Sevelopme	nt		PE NUMBER AT 0207581F	JOINT JOINT	STARS			9	PROJECT 670003
9	A. Project Cost Breakdown (\$ in Thousands)	(\$ in Thousan	(Sp				0001 XI	000	2000	Ş	EV 2001
9	Block 10 (TADIL-J, JIMIS and DMS/COTS) efforts	id DMS/COTS) efforts				4,	4,528	2,041	31 ==	0
5	Block 20 (CRP) efforts						20,	20,203	20,233	83	25,300
3	Block 40 (RTIP) efforts						10, 17,	10,357 17,276	16,585 77,618	ე ∞.	16,104 70,714
59	Support Systems and Crew Trainer Development Advanced Development	ainer Developr	nent				· 9	6,171 247		0 0	0 0
33	Test Efforts Total						32, 91,	32,919 91,701	31,105 147,582)5 ;2	32,000 144,118
9	B. Budget Acquisition History and Planning Information (\$ in Thousands)	y and Plannin	g Information	(\$ in Thousand	ds)						
3	Performing Organizations:										
	Contractor or Government	Contract Method/Type	Award or	Performing	Project						
	Performing	or Funding	Obligation	Activity	Office	Total Prior	Budget	Budget	Budget	Budget to	Total
	Activity	<u>Vehicle</u>	Date	EAC	EAC	to FY 1999	FY 1999	FY 2000	EY 2001	Complete	Program
	* Joint STARS RDT&E										
	funding prior to FY98 was in PF 0604770F										
	Product Development Organizations	ations									
	GMSD**	CPFF	May 97	166,491	166,491	103,411	20,203	17,577	25,300	0	166,491
	Computer Replacement										
	Program GMSD	CPFF	May 97	48.245	48.245	549	10.163	13.632	14.601	9.300	48.245
	SATCOM		,	`							
		CPFF	May 97	741,062	741,062	5,169	17,276	71,537	70,714	576,366	741,062
	Advanced Dev. (RTIP) Efforts										
	GMSD Other Dev. Efforts	Various	Various	N/A	N/A	2,339,634	11,140	13,731	1,503	Continuing	TBD
Δ.	Project 670003			Pag	Page 5 of 7 Pages	Se			Exhib	Exhibit R-3 (PE 0207581F)	07581F)

	RDT&E PROGRAM ELEMENT	RAM ELE		//PROJECT (COST BF	BREAKDOWN (R-3)	WN (R-3)		DATE F 6	February 2000	00
805 07	вирсет астилту 07 - Operational System Development	Developmer	nt 		PE NUMBER A 0207581F	ND TITLE JOINT	STARS			<u>а</u> .	РРОЈЕСТ 670003
6	Performing Organizations Continued: ** Grumman Melbourne Systems Division (now Northrop Grumman) Support and Management Organizations	Continued: ems Division (n.	ow Northrop	Grumman)							
	Joint Program Office, Program Support		N/A	N/A	N/A	365,816	0	0	0	0	365,816
	Test and Evaluation Organizations GMSD, E-8C Follow-On Test	tions SS/FFP/CPFF Aug 96	Aug 96	156,230	156,230	30,625	18,066	16,617	16,775	74,147	156,230
	GMSD, Aircraft Over & Above Tests	SS/FFP/CPFF Aug 96	Aug 96	30,596	30,596	5,480	3,295	2,480	4,618	14,723	30,596
	GMSD, Follow- On Test Support MILSTRIP	SS/FFP/CPFF Aug 96	Aug 96	3,737	3,737	1,259	179	573	333	1,393	3,737
	Range Support Horizons Tech. (SETA)	Allotment Time and Materials	N/A Various	N/A N/A	N/A N/A	26,696 36,136	603 4,654	1,243	1,165	Continuing Continuing	TBD TBD
	Joint Test Force Support Misc. Test Efforts	Allotment Various	N/A N/A	N/A N/A	N/A N/A	25,863 117,149	1,649 4,473	2,360 2,452	2,361	Continuing Continuing	TBD
9	Government Furnished Property: Continueth Item Description Product Development Property N/A Support and Management Property N/A	perty: Contract Method/Type or Funding Vehicle y	Award or Obligation Date	<u>Delivery</u> Date		Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
<u>a</u> .	Project 670003			Pa	Page 6 of 7 Pages	ies			Exhib	Exhibit R-3 (PE 0207581F)	07581F)

RDT&E PROGRAM ELEMENT/PROJECT	ECT COST BREAKDOWN (R-3)	VN (R-3)		DATE Fe	February 2000	
BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0207581F JOINT STARS	STARS	:		PR(67	РРОЈЕСТ 670003
(U) Government Furnished Property Continued: Test and Evaluation Property N/A						:
Subtotals Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation	Total Prior to FY 1999 2,448,763 365,816 243,208	Budget FY 1999 58,782 0 32,919	Budget FY 2000 116,477 0 31,105	Budget FY 2001 112,118 0 32,000	Budget to Complete TBD 0 TBD	Total Program TBD 365,816 TBD
	787.7 CO.C	71,/01	141,382	144,118		
Project 670003	Page 7 of 7 Pages			Exhibit	Exhibit R-3 (PE 0207581F)	'581F)

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	RDT&	RDT&E BUDGET ITEM JU		ATION	STIFICATION SHEET (R-2 Exhibit)	(R-2 Ex	hibit)		DATE	February 2000	y 2000
BUDG 07 -	вирвет АстіvітY 07 - Operational Sy s	вирсет астилту 07 - Operational System Development			PE NUMBER AN 0207590F	PE NUMBER AND TITLE 0207590F Seek Eagle	Eagle				PROJECT 674037
	COST (\$ ir	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
674037	77 SEEK EAGLE Certifications	ifications	17,680	22,851	19,472	17,799	17,013	18,946	18,556	Continuing	TBD
	Quantity of RDT&E Articles	Articles	0	0	0	0	0	0	0	0	0
E	A. Mission Description The Air Force has a vari countless different loadi change, and as new airci and separation (jettison i EAGLE program compl analysis. Over 700 airci months to years. The Si resources for sustainmer Software (CWDS), creat programs including F-22 (JDAM), Joint Air to Su inventory aircraft.	A. Mission Description The Air Force has a variety of combat aircraft and numerous stores (munitions, missiles, fuel tanks, electronic countermeasures pods, etc.). Aircraft carry these stores in countless different loading combinations determined by operational scenarios, missions, and tactics. Loading configurations change as operational plans and tactics change, and as new aircraft and stores are developed and produced. Before operational use, the Air Force must certify these configurations for safe loading, carriage, and separation (jettison and normal release), and must verify ballistics accuracy under the user-certified carriage and employment parameters. The Air Force SEEK EAGLE program completes these certifications through any combination of ground and flight testing, wind tunnel testing, modeling and simulation, and engineering analysis. Over 700 aircraft-store combinations exist to be certified, with new ones added on a regular basis. Depending upon the complexity, certification takes from months to years. The SEEK EAGLE program is also responsible for insertion of new and emerging technologies into the SEEK EAGLE process and providing resources for sustainment of a viable Air Force aircraft-store certification capability. Electronic Technical Orders are developed through the Combat Weapons Delivery Software (CWDS), creating cost savings by eliminating paper technical orders. SEEK EAGLE funds are currently budgeted to support certification for new weapons programs including F-22, Joint Strike Fighter (JSF), Sensor Fuzed Weapon (JSOW), AIM-9X, AIM-120 C5 (AMRAAM), and many other inventory stores on inventory aircraft.	merous store by operation and produces t verify balli, gh any comb o be certifies responsible ft-store certii ng paper tecl sensor Fuzed M), Joint St	s (munition al scenarios I. Before op stics accurac ination of g I, with new for insertior fication cap mical order: Weapon (S andoff Weap	s, missiles, f, missions, a perational us perational us cy under the ground and fl ones added of n of new and ability. Elect S. SEEK EASFW), Wind pon (JSOW),	uel tanks, el nd tactics. I e, the Air F cuser-certific ight testing, on a regular emerging te ronic Techn (GLE funds Corrected M. AIM-9X, A	ectronic cou- oading conforce must cer d carriage ar wind tunnel basis. Depe chnologies i ical Orders ar are currently funitions Dis	ntermeasure figurations of rtify these of rtify these of and employm testing, mo nding upon into the SEE ire develope / budgeted to spenser (WG	ss pods, etc.) thange as op onfiguration tent paramet deling and s the complex K EAGLE I dd through th o support ce NMD), Joint f), and many	. Aircraft ca erational plan s for safe loa ers. The Air imulation, an ity, certifical process and p to Combat W trification for Direct Attack other invent	rry these stores in is and tactics ding, carriage, Force SEEK d engineering ion takes from roviding eapons Delivery inew weapons & Munition ory stores on
9999	EY 1999 (\$ in Thousands) \$1,300 Cor \$2,400 Init \$2,150 Cor	unds) Continued development of F-22 data and engineering models to use for follow-on F-22 weapons certification Initiated/continued/completed various automation projects and automated Technical Orders/mission planning projects using CWDS Continued/completed various technology improvement projects and aircraft load/separation prediction capabilities using Applied Co Fluid Dynamics (ACFD)	2 data and er various autor echnology ir	ngineering n mation proje nprovement	nodels to use ects and auto t projects and	for follow- mated Tech l aircraft loa	on F-22 wea nical Orders d/separation	pons certifi /mission pla . prediction (cation inning projec capabilities i	cts using CW using Applie	data and engineering models to use for follow-on F-22 weapons certification automation projects using CWDS crious automated and automated Technical Orders/mission planning projects using CWDS chnology improvement projects and aircraft load/separation prediction capabilities using Applied Computational
999	\$10,404 \$1,426 \$17,680	Initiated/continued/completed various aircraft-store certifications on USAF fighter and bomber aircraft Munitions Effectiveness Evaluation of extended range CBU-87 using strap-on wing kit (LongShot) Total	various aircr ation of exte	aft-store cer nded range	rtifications o CBU-87 usi	n USAF figh ng strap-on '	iter and bom wing kit (Lo	lber aircraft ngShot)			
Ą	Project 674037			Page	Page 1 of 6 Pages		:	- - - -	Ш i	:xhibit R-2 (Exhibit R-2 (PE 0207590F)

	RDT&E BUDGET ITEM JUSTIFICATION	STIFICATION SHEET (R-2 Exhibit)	<u></u>	DATE February 2000	2000
800 07	вирсет астилту 07 - Operational System Development	PE NUMBER AND TITLE 0207590F Seek Eagle	Ð		PROJECT 674037
<u> </u>	A. Mission Description Continued				
999999	\$1,800 Continue development of F-22 data and engineering models to use for follow-on F-22 weapons certification \$1,800 Lontinue-complete various automation projects and automated Technical Orders/mission planning projects using CWDS \$2,450 Lontinue/complete various technology improvement projects and aircraft load/separation prediction capabilities using ACFD \$16,201 Initiate/continue/complete various aircraft-store certifications on USAF fighter and bomber aircraft \$22,851 Total	models to use for follow-on F-22 sts and automated Technical Orde projects and aircraft load/separal fications on USAF fighter and bo	weapons certifice rrs/mission plannit tion prediction cap mber aircraft	ntion 1g projects using CWDS abilities using ACFD	
999999	\$3,100 Continue development of F-22 data and engineering models to use for follow-on F-22 weapons certification \$2,500 Initiate/continue/complete various automation projects and automated Technical Orders/mission planning projects using CWDS \$2,500 Continue/complete various technology improvement projects and aircraft load/separation prediction capabilities using ACFD \$11,322 Initiate/continue/complete various aircraft-store certifications on USAF fighter and bomber aircraft Total	models to use for follow-on F-22 stand automated Technical Orde projects and aircraft load/separal fications on USAF fighter and bo) weapons certifics srs/mission plannit tion prediction cap mber aircraft	ution ng projects using CWDS nabilities using ACFD	
9	B. Budget Activity Justification The RDT&E Budget Activity is 7, Operational Systems Development, because the program supports fielded systems.	use the program supports fielded	systems.		
9	C. Program Change Summary (\$ in Thousands)				
99	Previous President's Budget (FY 2000 PBR) Appropriated Value	<u>FY 1999</u> 18,767 19,090	EY 2000 23,133 23,133	FY 2001 19,645	<u>Total Cost</u> TBD
9	Adjustments to Appropriated Value a. Congressional/General Reductions	-269	-12		
	 b. Small Business Innovative Research c. Omnibus or Other Above Threshold Reprogram 	-495	-126		
	d. Below Threshold Reprogram e. Rescissions	-493 -153	-144		
9	f. Other Adjustments to Budget Years Since FY 2000 PBR			-173	TBD
<u>[</u> 3	Current Budget Submit/FY 2001 PBR	17,680	22,851	19,472	TBD
П	Project 674037	Page 2 of 6 Pages		Exhibit R-2 (PE 0207590F)	: 0207590F)
		,			

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	GET ITE	M JUSTIF	CATION	SHEET	(R-2 Exhi	bit)	·α	DATE February 2000	y 2000
BUD(- 20	вирсет астилту 07 - Operational System Development	velopment			PE NUMBER AND TITLE 0207590F Seek	AND TITLE F Seek Eagle	gle			PROJECT 674037
(D)	C. Program Change Summary (\$ in Thousands) Continued	(\$ in Thousa	nds) Continue	Į.						
9	Significant Program Changes: FY99: \$1,500 Congressional plus-up for Longshot testing. Note: Of the \$493 BTR amount in FY 1999 above, \$158 paid canceled year bills	us-up for Long in FY 1999 at	shot testing.	l canceled year	r bills					
<u> </u>	D. Other Program Funding Summary (\$ in Thousands) EX 1999 EX 2000 Actual Estimate	mmary (\$ in T FY 1999 Actual	Chousands) FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to	Total Cost
<u> </u>	AF RDT&E Other APPN									
£	Proc of Ammunition, AF* - P-1 Line JDAM	0	0	0	146	0	14	0	0	290
<u>E</u>	- P-1 Line WCMD	0	0	0	0	0	134	0	0	4,146
99	Missile Procurement, AF* - P-1 Line JSOW	9.511	1,150	0	1.023	1.175	1.269	1.267	Continuing	TBD
3	- P-1 Line AIM-120 C5	0	0	612	0	0	0	0	0	15,137
9	(AMKAAM) - P-1 Line AIM-9X,	0	0	2,918	5,331	1,944	0	4,266	Continuing	TBD
9	(Sidewinder) - P-1 Line JASSM	0	0	0	744	2,896	3,607	2,882	Continuing	TBD
	* Note: The SEEK EAGLE procurement dollars shown above are appropriated in each weapon's P-1 line.	surement dollar	rs shown above	are appropria	ted in each wea	tpon's P-1 line.		Ì	0	
9	E. Acquisition Strategy Budget authorization for procurement funds are given directly to the weapon system program offices, who then procure the required certification test articles through the weapon production contract.	ment funds are	given directly	to the weapon	system progra	m offices, who	then procure 1	the required ce	ertification test arti	cles through the
<u>(C</u>	F. Schedule Profile				FV 1999		FY 2000	000	FV	FY 2001
۵	Project 674037			Pag	Page 3 of 6 Pages				Exhibit R-2 (PE 0207590F)	PE 0207590F)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	HEET (R-2 E	=xhibit)		DATE	February 2000	2000
вирсет аститту 07 - Operational System Development	PE NUMBER AND TITLE 0207590F Seek Eagle	LE k Eagle				PROJECT 674037
(U) F. Schedule Profile Continued	EY 1999 2 3 4	-	EY 2000	4	EY 2001	001 3 4
(U) AIM-120 CS (AMRAAM) * * * * * X X X X X X X X X X X X X X	* * * * * * * * * * * * * * * * * * *	gram milesto	X X X X X X X X X X X X X X X X X X X	X X aff-store cor	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X
Project 674037	Page 4 of 6 Pages			Û	Exhibit R-2 (PE 0207590F)	(0207590F)

	RDT&E PROGRAM ELEMENT	RAM ELE		/PROJECT COST BREAKDOWN (R-3)	OST BE	EAKDOV	WN (R-3)		DATE F	February 2000	۾
8UD 04	BUDGET ACTIVITY 07 - Operational System Development	Developme			PE NUMBER AT 0207590F	PE NUMBER AND TITLE O207590F Seek Eagle	agle			id 9	PROJECT 674037
9	A. Project Cost Breakdown (\$ in Thousands)	(\$ in Thousand	(১)					G			1000 231
5	Process Sustainment						2.150	2.150	2.400	3 8	2.500
3	F-22 Data & Engineering Models	odels					. 	1,300	1,800	00	3,100
3	Engineering Analysis						3,	3,600	4,000	00	4,250
9	Flight Testing						5,0	5,004	9,101	01	5,222
9	Extended Range JDAM Testing (Longshot)	ing (Longshot)					1,	1,426		0	0
9	Wind Tunnel Testing						- , (1,000	2,200	00	006
<u> </u>	Other Ballistic/ Safe Becane Analysis	e Analysis					7	2,400	2,450	00	7,550
9	- Tech Order/P.C. Floppy Disk	or many sus									
3	- Loading Process Development/Verification	velopment/Verif	ication								
9	Mission Support						~ ~	800	6	006	950
9	Total						17,	17,680	22,851	51	19,472
3	B. Budget Acquisition History and Planning Inform	ry and Plannin		ation (\$ in Thousands)	ন্ত						
9	Performing Organizations:										
	Contractor or	Contract									
	Government	Method/Type	Award or	Performing	Project	-				,	1
	Pertorming Activity	or Funding Vehicle	<u>Ubligation</u> Date	Activity EAC	EAC	Lotal Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
	Product Development Organizations	zations	!								
	Lockheed Martin	C/CPFF	Jul 98	15,648	15,648	009	1,300	1,800	3,100	8,848	15,648
	Leigh Aerosystems	FFP	Jan 00	1,000	1,000	0	1,000	0	0	0	1,000
	Support and Management Organizations	ganizations									
	Mission Support	PO/REO	Continuous	N/A	N/A	6,067	800	006	950	Continuing	TBD
	Test and Evaluation Organizations	tions									
	46th Test Wing	PO/REO	Continuous	N/A	N/A	89,351	9,840	12,351	10,022	Continuing	TBD
	AEDC	PO/REO	Continuous	N/A	N/A	13,738	1,000	2,200	006	Continuing	TBD
	46th Test Wing	REO	Nov 99	426	426	0	426	0	0	0	426
	Various	PO/REO	Continuous	N/A	N/A	38,392	3,314	2,600	4,500	Continuing	TBD
11	Project 674037			Page	Page 5 of 6 Pages	es			Exhit	Exhibit R-3 (PE 0207590F)	77590F)

RDT&E PROGRAM ELEMENT/PROJECT	CT COST BREAKDOWN (R-3)	VN (R-3)		DATE Fe	February 2000	0
BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0207590F Seek Eagle	agle			9 9	РRОЈЕСТ 674037
Subtotals	Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
Subtotal Product Development Subtotal Support and Management	009	2,300	1,800	3,100	8,848 TRD	16,648 TRD
Subtotal Test and Evaluation	141,481	14,580	20,151	15,422	TBD	TBD
Total Project	151,148	17,680	22,851	19,472	TBD	TBD
Project 674037	Page 6 of 6 Pages			Exhibi	Exhibit R-3 (PE 0207590F)	7590F)

PE NUMBER: 0207601F
PE TITLE: USAF Modeling and Simulation

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	JSTIFIC	ATION	SHEET	(R-2 Ex	hibit)		DATE	Februa	February 2000
8UDC 07 -	BUDGET ACTIVITY O7 - Operational System Development			PE NUMBER AND TITLE 0207601F USAF	AND TITLE F USAF	Modelin	g and Si	PE NUMBER AND TITLE 0207601F USAF Modeling and Simulation		
	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	13,632	21,093	17,624	14,929	11,232	11,458	11,684	Continuing	TBD
671008	National Air and Space Warfare Model (NASM)	11,920	15,430	11,909	11,180	7,395	7,544	7,692	Continuing	TBD
674567	Joint Modeling and Simulation System (JMASS)	1,712	5,663	5,715	3,749	3,837	3,914	3,992	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	Continuing	TBD
(2)	A. Mission Description Provides RDT&E funding for major USAF Modeling and Simulation efforts such as the National Air and Space [Warfare] Model (NASM)-the air and space element of the Joint Simulation System (JSIMS); and the Joint Modeling and Simulation System (JMASS). JSIMS will be the sole readiness training simulation used by all CINCs, Services, NAFs and at all simulation centers to train Joint Force Commanders, Joint Task Force staffs, Components and their staffs, including Joint Force Air Component Commanders and Air Operations Center personnel. JMASS provides High Level Architecture (HLA)-compliant architecture for engagement level simulations.	; and Simula fodeling and foint Force C personnel. J	tion efforts s Simulation Commanders MASS prov	and Simulation efforts such as the National Air and Space [Warfare] Model (NASM)-the air and space el fodeling and Simulation System (JMASS). JSIMS will be the sole readiness training simulation used by a oint Force Commanders, Joint Task Force staffs, Components and their staffs, including Joint Force Air personnel. JMASS provides High Level Architecture (HLA)-compliant architecture for engagement level	lational Air a ASS). JSIN Force staffs,	and Space [7] IS will be th Component	Narfare] Mc e sole readii is and their s	odel (NASM ness training staffs, includ architecture)-the air and simulation v ling Joint Fo for engagem	and Simulation efforts such as the National Air and Space [Warfare] Model (NASM)-the air and space element of iodeling and Simulation System (JMASS). JSIMS will be the sole readiness training simulation used by all CINCs, oint Force Commanders, Joint Task Force staffs, Components and their staffs, including Joint Force Air personnel. JMASS provides High Level Architecture (HLA)-compliant architecture for engagement level
<u> </u>	B. Budget Activity Justification Initiated in FY 94, this program is in budget activity 7 Modeling and Simulation efforts.		ıal System I	Development	, Research C	ategory bec	ause it prov	ides RDT&I	3 funding for	- Operational System Development, Research Category because it provides RDT&E funding for major USAF
<u>e</u>	C. Program Change Summary (\$ in Thousands)				,			ļ	,	
555	Previous President's Budget (FY 2000 PBR) Appropriated Value Adjustments to Appropriated Value a. Congressional/General Reductions b. Small Business Innovative Research c. Omnibus or Other Above Threshold Reprogram d. Below Threshold Reprogram e. Rescissions				EY 1999 14,478 14,899 -421 -455 -324 -67		19,299	FY 2001 17,624	= 1 +-	Total Cost
			Page	Page 1 of 8 Pages				В	xhibit R-2 (Exhibit R-2 (PE 0207601F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SHEET (R-2 Exhibi	it)	DATE February 2000	ry 2000
80DC 07 -	вирсет астилту 07 - Operational System Development	PE NUMBER AND TITLE 0207601F USAF Modeling and Simulation	deling and Sin	nulation	
(£)	C. Program Change Summary (\$ in Thousands) Continued				,
4.5	f. Other	FY 1999	FY 2000 21,093	FY 2001	Total Cost
33	Auftrantients to Budget 1 Eats Since F 1 2000 FBR. Current Budget Submit/FY 2001 PBR.	13,632	21,093	17,624	TBD
9	Significant Program Changes: Significant Program Changes: In FY00, funding from PE64256F, Threat Simulator Development, was transferred into PE27601F in FY00 and FY01 for the Joint Modeling and Simulation (JMASS) program development.	nulator Development, was trans	sferred into PE276	01F in FY00 and FY01	for the Joint
	Page	Page 2 of 8 Pages		Exhibit R-2 (Exhibit R-2 (PE 0207601F)

	RDT&E	RDT&E BUDGET ITEM JU	STIFIC/	ATION S	STIFICATION SHEET (R-2A Exhibit)	R-2A E	xhibit)		DATE	February 2000	y 2000
BUDC 07 -	вирсет АСТИЛТУ 07 - Operational Sys	вирдет АСТИЛТУ 07 - Operational System Development			PE NUMBER AND TITLE 0207601F USAF	R AND TITLE	Modelin	g and Si	PE NUMBER AND TITLE 0207601F USAF Modeling and Simulation		PROJECT 671008
	COST (\$ in	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
671008		National Air and Space Warfare Model (NASM)	11,920	15,430	11,909	11,180	7,395	7,544	7,692	Continuing	TBD
(D)	A. Mission Description This program provides funds for Air Force a operations. A new wargaming model, NAS use and role of modeling and simulation (Mefforts. NASM includes an overall USAF N combat resolution model to meet the needs staffs. Primary users will be the unified cor components, as supported by BLUE FLAG DoD, Joint Staff and Services Joint Simulat and NSA under CINC JFCOM sponsorship.	A. Mission Description This program provides funds for Air Force and Joint wargaming architecture and model development, primarily in support of battlestaff training, education, and military operations. A new wargaming model, NASM, is being developed to replace the existing Air Force standard Air Warfare Simulation (AWSIM). NASM will expand the use and role of modeling and simulation (M&S) in support of operational and acquisition decision making, and increase the interoperability between Air Force and joint efforts. NASM includes an overall USAF M&S architecture and provides a reusable, portable, scaleable, robust distributed core for other simulations. It includes an air combat resolution model to meet the needs of USAF MAJCOMs and Unified/Specified Command air components to train Air Component Commanders and their battle staffs. Primary users will be the unified command air components, Commanders in Chief (CINCs), Joint Forces Air Component Commander's (JFACC), and Service components, as supported by BLUE FLAG and WPC for use in joint exercises involving air, ground, and sea campaigns. NASM is the air component portion of the DoD, Joint Staff and Services Joint Simulation System (JSIMS) which includes Enterprise partner programs from the Joint Staff, Army, Navy (and USMC), DIA, NRO and NSA under CINC JFCOM sponsorship.	wargaming a gleveloped pport of ope tecture and J MAJCOMs components for use in jc n (JSIMS) w	rchitecture a to replace the rational and provides a re and Unified/s, Command int exercises thich include	and model dhe existing acquisition eusable, port Specified Clers in Chief sinvolving serious es Enterprise	evelopment, Air Force sta decision ma able, scaleal ommand air (CINCs), Jo iir, ground, partner pro	primarily ir undard Air W king, and ino ble, robust d components oint Forces A and sea cam; grams from	support of larafare Simu crease the in istributed co s to train Air Nir Compone paigns. NA, the Joint St.	battlestaff tralation (AW') teroperability re for other Component ent Comman SM is the ain aff, Army, N	aining, educa SIM). NASN sy between A simulations. t Commander der's (JFACC r component	tion, and military A will expand the ir Force and joint It includes an air s and their battle), and Service portion of the MC), DIA, NRO
9999	EY 1999 (\$ in Thousands) \$9,795 Co \$2,125 Co \$11,920 Tot	nds) Continued development of specific air objects to support JSIMS architecture Continued NASM integration effort and operate the program management of Total	cific air obj	ects to suppo erate the pr	cific air objects to support JSIMS architecture effort and operate the program management office	chitecture igement offi	ಲ್ಪ				
99999	EY 2000 (\$ in Thousands) \$11,125 Co \$2,355 Co \$1,950 Upg \$15,430 Tot	nds) Continue development of specific air objects to support JSIMS architecture Continue NASM integration effort and operate the program management office Upgrade Synthetic Theater Operations Research Model (STORM) and Powerscene model. Total	ific air objec ffort and ope erations Res	ts to suppor trate the proper earch Model	t JSIMS arc gram manag l (STORM)	hitecture ement offic and Powersc	e ene model.				
3333	FY 2001 (\$ in Thousands) \$9,546 Co \$2,363 Co \$11,909 Tot	nds) Continue development of specific air objects to support JSIMS architecture Continue NASM integration effort and operate the program management office Total	ific air objec ffort and ope	ts to suppor rrate the pro	t JSIMS arc gram manag	hitecture ement offic	d)				
<u> </u>	B. Project Change Summary	ımmary									
ď	Project 671008			Page	Page 3 of 8 Pages				Ä	hibit R-2A (Exhibit R-2A (PE 0207601F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	JUSTIFICATION	I SHEET (R-2A Exh	libit)	ď	DATE February 2000	7 2000
8UD 07	BUDGET ACTIVITY O7 - Operational System Development		PE NUMBER AND TITLE 0207601F USAF	AND TITLE F USAF M	PE NUMBER AND TITLE 0207601F USAF Modeling and Simulation	id Simulat	ion	PROJECT 671008
(വ)	C. Other Program Funding Summary (\$ in Tho FY 1999 Actual	ousands) EY 2000 EY 2001 Estimate Estimate	FY 2002. Estimate	FY 2003 Estimate	EY 2004 Estimate	FY 2005 Estimate	Cost to	Total Cost
33							Continuing Continuing	TBD
9	D. Acquisition Strategy NASM provides the Air and Space software components of the Joint Simulation System (JSIMS). Resources are reviewed and measured against an Enterprise program baseline, with the Earned Value and performance measurement reporting against the baseline accomplished on a monthly basis. The contract was selected by source selection and is a Cost Plus Award Fee (CPAF).	onents of the Joint Simul measurement reporting ag	ation System (Ji gainst the baselii	SIMS). Resou 1e accomplishe	rces are review ed on a monthly	ed and measu y basis. The c	red against an Ente ontract was selecte	rprise program d by source
9	E. Schedule Profile	-	FY 1999 2 3	4	$\frac{\text{EY} 2000}{1}$.000 3	EX EX	EY 2001
<u> </u>	Initial Op Capability (IOC) 3QFY02 Full Op Capability (FOC) 4QFY04 NASM development schedule is aligned with the Joint Simulation System (JSIMS) Acquisitic Initial Operational Capability (IOC) in FY02 and Full Operational Capability (FOC) in FY04	Joint Simulation System (JSIMS) Acquisition Program Baseline (APB) development schedule required to achieve Full Operational Capability (FOC) in FY04.	(JSIMS) Acquis	ition Program	Baseline (APB) development	schedule required	
Ц.	Project 671008	Pa	Page 4 of 8 Pages				Exhibit R-2A (PE 0207601F)	E 0207601F)

	RDT&E PROGRAM ELEMEN	SAM ELE		T/PROJECT C	OST BE	COST BREAKDOWN (R-3)	WN (R-3)		DATE Fe	February 2000	e
BUE 07	вирсет астилту 07 - Operational System Development	evelopmer	nt		PE NUMBI 020760	PE NUMBER AND TITLE 0207601F USAF Modeling and Simulation	Modeling	and Simul		9	PROJECT 671008
(D)	A. Project Cost Breakdown (\$ in Thousands)	in Thousand	(জ			-	1.77	o	00C X3	ç	100C XII
555	Software development Program Management/Contractor Support Congressional Add; Synthetic Theater Operations Research Model (STORM) upgrade	or Support Theater Operat	ions Research	Model (STORM) upgrade		9,795 9,795 2,125 0	9,795 2,125 0	11,125 11,125 2,355 1,950	0 2 2 E	9,546 2,363 0
<u> </u>		and Plannin	e Information	ı (\$ in Thousand	্ত্র		11,9	11,920	15,430	0	11,909
9											
	Contractor or Government	Contract Method/Type	Award or	Performing	Project						
	gui	or Funding	Obligation	Activity	Office	Total Prior	Budget	Budget	Budget	Budget to	Total
	Activity Product Development Organizations	<u>Venicie</u> ations	<u>Date</u>	EAC	EAC	to FY 1999	FY 1999	F X 2000	FY 2001	Complete	Program
	Raytheon (NASM) Ti		3 Mar 97	74,541	74,541	17,135	9,172	13,010	9,489	27,383	76,189
	8		7 Apr 94	9,876	9,876	11,454				0	11,454
	A/R)		2 Jun 94	4,676	4,676	4,059				0	4,059
	TRW (AFSOM) TI	TRN	12 Dec 97	39	39	39				0	39
	27	nizations									
	ng Mgt Spt (TEMS)	Del Order	1 Feb 94	15,413	15,413	8,082	1,193	1,200	1,200	3,471	15,146
	MITRE C.	Contract Mod	11 Aug 94 Varions	13,200	13,200	5,869	1,194	1,200	1,200	3,471	12,934
	les Prototyne Contracts	al lous	v at 10 tus	12,100	12,160	11,116	201	07	707	1,041	19,137
	Test and Evaluation Organizations	sua									
	0.14441					Total Prior	Budget	Budget	Budget	Budget to	Total
	Subtotal Product Develonment					32.687	9.172	13 010	9 489	27.383	91 741
	Subtotal Support and Management	ent				31,063	2,748	2,420	2,420	8,586	47,237
	Subtotal Test and Evaluation										
	Total Project					63,750	11,920	15,430	11,909	35,969	138,978
	Project 671008			Pag	Page 5 of 8 Pages	Š			Exhibi	Exhibit R-3 (PE 0207601F)	07601E)
	2001 1000			<u>.</u>	2 2 2 2	3			1	-> -> ->	/ :: ^?

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	JUSTIFIC,	ATIONS	энеет (R-2A E	xhibit)		DATE	February 2000	y 2000
80DC 07	вирсет аститу 07 - Operational System Development			PE NUMBER AND TITLE 0207601F USAF	RAND TITLE F USAF	Modelin	PE NUMBER AND TITLE 0207601F USAF Modeling and Simulation	mulation		PROJECT 674567
	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
674567	67 Joint Modeling and Simulation System (JMASS)	1,712	5,663	5,715	3,749	3,837	3,914	3,992	Continuing	TBD
9	A. Mission Description The Joint Modeling & Simulation System (JMASS) is a simulation support environment for the development, configuration, execution, and analysis of high fidelity, repeatable simulations with re-usable models-focus is tactical/engagement level simulations with the present concentration on electronic combat. JMASS is a full system software implementation of a modern object based simulation architecture. JMASS provides users with the tools to: Develop objects, assemble these objects into models, configure the models in a complete simulation, execute the simulation, and post process the simulation data. JMASS tools assist users in developing fully compliant objects; users concentrate on the models and analysis, not computer science.	S) is a simulatic is is tactical/eng ct based simula imulation, exectional and analysis, is and analysis, is	on support er gagement lev fion architec ute the simul not compute	rvironment frel simulation sture. JMAS lation, and pr	or the devel ns with the I S provides v	opment, con resent conco isers with the he simulatic	figuration, e entration on e tools to: I n data. JM.	xecution, ar electronic c Develop obje ASS tools as	id analysis of ombat. JMA ccts, assembl	high fidelity, SS is a full these objects developing fully
599999	FY 1999 (\$ in Thousands) \$507 High Level Architecture (HLA) Compliance \$245 Improved User Interface \$675 Developed Request For Proposal (RFP) documentation and operate the program management office \$285 Prototyped JMASS software on a Personal Computer (PC) \$1,712 Total	ILA) Compliance oposal (RFP) docu re on a Personal C	ice ocumentation I Computer (n and operat (PC)	e the progra	m managem	ent office			
55555	 EY 2000 (\$\frac{\$\text{in Thousands}}\$ \$2,463	ct (MSO) deve lopment (Envire ther Service Si	lopment (cor onment, Terr mulations	mputer repre ain, Human	sentations o interaction,	f individual background	DoD weapo models and	n systems) simulations		
55555	 EY 2001 (\$\frac{\$}\$ in Thousands) \$3,949	ct (MSO) deve lopment (Envir ther Service Si	lopment (cor onment, Terr mulations	mputer repre ain, Human	sentations o interaction,	f individual background	DoD weapo models and	n systems) simulations		
9	B. Project Change Summary PE 64256F, Threat Simulator Development, transferred \$2.1M in FY00 and FY01 for JMASS Joint Program Development.	етеd \$2.1M in	FY00 and F	Y01 for JM	ASS Joint P	rogram Deve	elopment.			
σ.	Project 674567		Page	Page 6 of 8 Pages	S			û	thibit R-2A (Exhibit R-2A (PE 0207601F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	ITEM	JUSTIF	CATION	SHEET (R-2A Ext	nibit)	٥	DATE February 2000	y 2000	
80D(вирсет аститу 07 - Operational System Development	sment			PE NUMBER AND TITLE 0207601F USAF	AND TITLE F USAF M	PENUMBER AND TITLE 0207601F USAF Modeling and Simulation	nd Simulat	ion	PROJECT 674567	
(£)	C. Other Program Funding Summary (\$ in Thousands) EY 1999 Actual Estimate	ry (\$ in Th 7 1999 Actual	nousands) FY 2000 Fetimate	EX 2001 Fetimate	FY 2002 Fertimate	FY 2003 Ferimate	FY 2004 Ferimate	FY 2005 Ferimate	Cost to	Total Cost	ost
999	AF RDT&E Other APPN PE64256F, Threat Simulator Development Project 3321 (EW Test Resources)	4,100							Continuing	TBD	Œ Œ
<u> </u>	D. Acquisition Strategy All major contracts for JMASS model development will	evelopme		be awarded after full and open competition.	l and open con	npetition.					
3	E. Schedule Profile				FY 1999		FY	FY 2000	EY	FY 2001	
999	Milestone 2 - RFP (completed 3QFY99) Contract Award Initial Delivery			-	ω *	4	1 X 2	ε	1	£ 4 Х	
о.	Project 674567			Pag	Page 7 of 8 Pages				Exhibit R-2A (PE 0207601F)	E 0207601F)	

	RDT&E PROGRAM ELEMENT/PRO	PROJECT COST BREAKDOWN (R-3)	OWN (R-3)		DATE Fe	February 2000	00
20	вирсет астииту 07 - Operational System Development	PE NUMBER AND TITLE 0207601F USAF Modeling and Simulation	≀E AF Modeli ng	and Simu	lation	9	РRОЈЕСТ 674567
9	A. Project Cost Breakdown (\$ in Thousands)		2	EV 1000	EV 2000	ç	EV 2001
5555	Software Development Contractor Support Program Management Support Total			1,030 240 442 1,712	4,363 1,000 300 5,663	2 m C 0 m	4,215 1,000 500 5,715
3	B. Budget Acquisition History and Planning Information (\$ in Thousands)	in Thousands)					
9	Performing Organizations:Contractor orContractGovernmentMethod/TypeAward orPerformingor FundingObligationActivityVehicleDateProduct Development OrganizationsVarious	Performing Project Activity Office Total Prior EAC EAC to FY 1999	or Budget 29 FY 1999 1,712	Budget FY 2000 5,663	Budget FY 2001 5,715	Budget to Complete	Total Program TBD
	Support and Management Organizations Test and Evaluation Organizations Subtotals Subtotal Product Development	Total Prior to FY 1999	or Budget 29 FY 1999 1,712	Budget FY 2000 5,663	Budget FY 2001 5,715	Budget to Complete TBD	Total. <u>Program</u> TBD
<u> </u>	Subtotal Support and Management Subtotal Test and Evaluation Total Project		1,712	5,663	5,715	TBD	ТВД
	Project 674567	Page 8 of 8 Pages			Exhibi	Exhibit R-3 (PE 0207601F))7601F)

	RDT&	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	JSTIFIC	ATION	SHEET	(R-2 Ex	hibit)		DATE	Februa	February 2000
BUDG 07 -	BUDGET ACTIVITY OPERATIONAL SVS	BUDGET ACTIVITY 17 - Operational System Development			PE NUMBER AND TITLE 0207605F Ward	AND TITLE	ming an	d Simula	PE NUMBER AND TITLE 0207605F Wargaming and Simulation Centers	nters	PROJECT 672888
	COST (\$ in	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
672888		Theater Air Command & Control Sim Facility (TACCSF)	3,822	19,087	3,874	6,005	6,281	6,406	6,534	Continuing	TBD
	Quantity of RDT&E Articles	Articles	0	0	0	0	0	0	0	Continuing	TBD
<u> </u>	A. Mission Description Funding provided for the ECS). TACCSF's missi TACCSF is used by the (BMC4I) simulation for evaluation. TACCSF pe lines of software code),	A. Mission Description Funding provided for the Air Force's premier warfighter-in-the-loop simulation facility operated at Kirtland AFB, NM by Det 4, 505th Exercise Control Squadron (505 ECS). TACCSF's mission is to provide advanced distributed simulation to the warfighter for improving theater air and space warfare systems and concepts of operation. TACCSF's mission is to provide advanced distributed simulation to the warfighter for improving theater air and space warfare systems and concepts of operation. TACCSF is used by the AC2TIG and other customers who require high-fidelity battle management, command, control, communications, computer, and intelligence (BMC4I) simulation for establishing system requirements, assessing interoperability, integrating actual C4I and weapon system, and conducting joint test and evaluation. TACCSF performs the upgrade of a complex equipment system consisting of 23 Air Force and Army weapon system simulators (containing over 2 million lines of software code), 18 internal computer networks, 36 mainframe computers, and 62 tactical warfighter-in-the-loop simulator consoles. These systems interoperate	ter-in-the-lo tributed simus who requirems, assessi plex equipm plex equipm s. 36 mainfr.	op simulatic ulation to th e high-fideli ing interope ent system c	on facility op e warfighter ity battle mar rability, integonsisting of ters, and 62 t	erated at Kii for improvii ragement, co grating actua 23 Air Forco	tland AFB, ig theater air or	NM by Det r and space v ntrol, comm eapon syster weapon syster weapon simuli-loop simuli	4, 505th Exwarfare systunications, (n. and conditer simulate tem simulate ator console	ercise Contro ems and con computer, an ucting joint t ors (containin	ol Squadron (505 cepts of operation. In intelligence iest and ng over 2 million stems interoperate
	with joint service simula communication circuits.	with joint service simulators and live fielded equipment via wide-area networks using state-of-the-art voice and data link communications over multiple long-haul communication circuits.	nt via wide-	area networ	ks using state	e-of-the-art	voice and da	ta link com	nunications	over multipl	le long-haul
999	FY 1999 (\$ in Thousands) \$2,561 Co \$934 Co	nds) Continued to maintain core structure to support users conducting RDT&E, mission rehearsal, and concepts of operation development Continued to support requirements definition, test support, scenario development, analysis, system engineering support, and VV&A of core	ructure to suj nents definiti	pport users (ion, test sup)	conducting R port, scenario	DT&E, mis o developme	sion rehears nt, analysis,	al, and conc	epts of oper ineering sup	ation develog	pment V&A of core
999	\$227 \$100 \$3,822	Provided program management. DIS provided flexibility, dial-up connectivity between TACCSF and various other M&S facilities. Total	at. up connectiv	rity between	l TACCSF ar	nd various of	her M&S fa	cilities.			
99	FY 2000 (\$ in Thousands) \$14,000 Pro	nds) Provides one-time funding to move TACCSF R&D mission into new facility; includes new computers, virtual flight simulators, mult-ship simulators and instructor control white-cell consoles for R&D distributed mission training	nove TACC!	SF R&D mi	ssion into ne	w facility; i	ncludes new	computers,	, virtual fligl	nt simulators	, mult-ship
99	\$3,738 \$1,000	Continue to maintain core structure to support users conducting RDT&E, mission rehearsal, and concepts of operation development. Continue to support requirements definition, test support, scenario development, analysis, system engineering support, and VV&A of core system.	icture to sup	port users con, test suppor	ort, scenario	OT&E, missi developmen	ion rehearsal t, analysis, s	l, and conce system engir	pts of operal neering supp	tion developi ort, and VV	ment. &A of core
Pr	Project 672888			Page	Page 1 of 4 Pages					xhibit R-2 (Exhibit R-2 (PE 0207605F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SHEET (R-2 Exhibi	it)	DATE Februa l	February 2000
BUD(07 -	вирсет астилту 07 - Operational System Development	PENUMBER AND TITLE 0207605F Wargaming and Simulation Centers	g and Simula	ation Centers	PROJECT 672888
(3)	A. Mission Description Continued				
9999	FY 2000 (\$\secondarrow{\seconda	connectivity between TACCSF and various other M&S facilities.	&S facilities.		
999	FY 2001 (\$ in Thousands) \$3,058 Continue to maintain core structure to support users conducting RDT&E, mission rehearsal, and concepts of operation development. \$466 Continue to support requirements definition, test support, scenario development, analysis, system engineering support, and VV&A o	ure to support users conducting RDT&E, mission rehearsal, and concepts of operation development. is definition, test support, scenario development, analysis, system engineering support, and VV&A of core	nearsal, and conce lysis, system engi	pts of operation developr neering support, and VV	nent. &A of core
993	s program management. ovides flexibility, dial-up	connectivity between TACCSF and various other M&S facilities.	&S facilities.		
9	B. Budget Activity Justification This program is in budget activity 7 - Operation System Development, becausimulation facility.	Development, because it continues development and upgrades of the Air Force's premier warfighter-in-the-loop	d upgrades of the	Air Force's premier warfi	ighter-in-the-loop
9	C. Program Change Summary (\$ in Thousands)	FV 1999	FY 2000	FY 2001	Total Cost
999	Previous President's Budget (FY 2000 PBR) Appropriated Value	5,272 5,287 5,287	5,192 19,192	3,874	1900
9	Adjustments to Appropriated Value a. Congressional/General Reductions b. Small Business Innovative Research	-15 -165	-105		
	c. Omnibus or Other Above Threshold Reprogram d. Below Threshold Reprogram e. Rescissions f. Other	-1,264			
99	Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR	3,822	19,087	3,874	TBD
Ω.	Project 672888	Page 2 of 4 Pages		Exhibit R-2 (Exhibit R-2 (PE 0207605F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TION SHEET	(R-2 Exhi	bit)	DA	DATE February 2000	2000
800 07	BUDGET ACTIVITY 17 - Operational System Development	PE NUMBER AND TITLE 0207605F Warg	PE NUMBER AND TITLE 0207605F Wargaming and Simulation Centers	ing and Si	mulation C	enters	PROJECT 672888
9	C. Program Change Summary (\$ in Thousands) Continued						
9	Significant Program Changes:						
9	D. Other Program Funding Summary (\$ in Thousands) FY 1999 FY 2000 Actual Ferimate Fet	FY 2001 FY 2002 Estimate Estimate	FY 2003 Ferimate	FY 2004 Ferimate	FY 2005 Estimate	Cost to	Total Cost
99							
9	E. Acquisition Strategy Provides funds for development, upgrade, and maintenance of virtual simulators. Simulators include Airborne Warning and Control Systems (AWACS), Joint Surveillance Attack Radar System (JSTARS), Advanced Airborne Sensor, Airborne Laser (ABL) TSQ-73 Fire Direction Center, PATRIOT and HAWK battal batteries and the F-15C to name a few.	ice of virtual simulators. Simulators include Airborne Warning and Control Systems (AWACS), Joint Airborne Sensor, Airborne Laser (ABL) TSQ-73 Fire Direction Center, PATRIOT and HAWK battalion and	ns include Airb (ABL) TSQ-73	orne Warning Fire Direction	and Control Sy ı Center, PATR	stems (AWACS), LOT and HAWK t	Joint pattalion and
9	F. Schedule Profile	FY 1999		FY 2000		FY 2001	
99999	Develop Core Structure (Phase 1: Completed 1QFY99) Develop & Integraste DIS & HLA (Phase 1: Completed 3QFY99) Unit Test & Evaluation Integration (Phase 1: Completed 4QFY99) DSI Service Fee (Annual: 4QFYxx) Upgrade AWACS & MCE software & test (Phase I: Completed 4QFY99)	· *	* * *	· ×	· ×××	· ×	· ×××
<u>u</u>	Project 672888	Page 3 of 4 Pages				Exhibit R-2 (PE 0207605F)	E 0207605F)
		1201					

	RDT&E PROGRAM ELEMENT		/PROJECT C	SOST BE	COST BREAKDOWN (R-3)	NN (R-3)		DATE F 6	February 2000	8
9 1	вирсет аститу 07 - Operational System Development	nent		PE NUMB! 020760	PE NUMBER AND TITLE 0207605F Wargaming and Simulation Centers	ming and	Simulatio	n Center		PROJECT 672888
3	A. Project Cost Breakdown (\$ in Thousands)	<u>ands)</u>				1 2 3 2 1		,		1000 232
56	Software Development Contractor Support					2,567 955	2,567 955	3,554 15,080	3 4 S	3,058
333	Program Management Support Total					, ç,	300	453 19,087	. E. C.	350 3,874
<u> </u>	B. Budget Acquisition History and Planning Information (\$ in Thousands)	ning Information	ı (\$ in Thousan	(sp						
9	Performing Organizations: Contractor or Government	_	Performing	Project						
	Performing or Funding Activity Product Development Organizations	Obligation Date	Activity EAC	Office EAC	Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
	Det 4, 505th CCEG Support and Management Organizations	1 Jan 90	Continuing Continuing	Continuing	5,272	3,822	19,087	3,874	Continuing	TBD
	Test and Evaluation Organizations				Total Prior	Budget	Budget	Budget	Budget to	Total
	Subtotals Subtotal Product Development				to FY 1999 5,272	FY 1999 3,822	EY 2000 19,087	FY 2001 3,874	Complete TBD	Program TBD
	Subtotal Support and Management Subtotal Test and Evaluation									
	Total Project				5,272	3,822	19,087	3,874	TBD	TBD
۵	Project 672888		Pa	Page 4 of 4 Pages	es			Exhib	Exhibit R-3 (PE 0207605F)	.07605F)

RDT&E BUDGET ITEM JU	JSTIFIC	ATION	STIFICATION SHEET (R-2 Exhibit)	(R-2 Ex	hibit)		DATE	Februa	February 2000
BUDGET ACTIVITY			PE NUMBER	PE NUMBER AND TITLE	010	in a Creek	9		PROJECT
u/ - Operational System Development			0700770	INISSII J	III PIAIEI	UZUGUUUF IMISSIOII FIAIIIIIIIII SYSTEIIIS	21112		0/ 2020
COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
673858 Air Force Mission Support System (AFMSS)	15,415	18,084	20,755	16,976	17,228	17,573	17,919	17,919 Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

A. Mission Description 9

AFMSS encompasses evolutionary software and hardware development in an open systems architecture. AFMSS today consists of the Mission Planning System (MPS), a UNIX-based system, the Portable Flight Planning Software (PFPS), a personal computer (PC)-based system, and the Joint Mission Planning System (JMPS), which is system. This program maintains and preserves combat capability on existing legacy planning systems which will migrate into a USAF wide standard mission planning The Mission Planning System program was established in 1990 to consolidate mission planning system development efforts into a single unit-level mission planning system known as the Air Force Mission Support System (AFMSS). Integrating military and commercial software on Commercial-Off-The-Shelf (COTS) hardware, the next generation PC-based system.

JDAM, JSOW, WCMD, ABL, JASSM, MALD, Global Hawk, and Predator. Platforms use tailored software called Aircraft/Weapon/Electronics (A/W/E) that integrate supporting conventional and nuclear armed conflict. The MPS design is centered around an open architecture, using standard protocols and interfaces, COTS hardware and software. The MPS currently or will support the following aircraft and associated weapons: B-1, B-2, B-52, F-15, F-16, F-117, F-22, U-2, AGM-130, AGM-142, The MPS provides comprehensive mission planning tools to conduct missions ranging from day-to-day training, peace time operations/exercises to complex operations with the core software to specialize the software for their mission.

The PFPS provides flight planning tools that support day-to-day training, peace time operations/exercises, and conventional armed conflict. The PFPS design is based HC-130H/N/P, AC-130, E-3, E-8, C-130E/H/I, LC-130, WC-130, C-27, C-17, E-4, T-38, C-141, RC-135, KC-10, KC-135R/E, C-5, C-9, A-10, MH-53, MH-47, on single user PCs. The user interface is Windows 95 and Windows NT. The PFPS currently or will support the following aircrafts: F-16, MC-130, EC-130, AH/MH-6J, and MH/HH-60.

(TAMPS), to form a single family of systems achieving Global Command and Control System (GCCS) compatibility through compliance with the Defense Information The JMPS is a continuation effort of the AFMSS MPS and PFPS directed at merging the AFMSS and the Navy's Tactical Automated Mission Planning System Infrastructure and Common Operating Environment (DII/COE)

Page 1 of 7 Pages Project 673858

Exhibit R-2 (PE 0208006F)

	RDT&E	RDT&E BUDGET ITEM JUSTIFICATION	STIFICATION SHEET (R-2 Exhibit)	DATE February 2000
80D(вирсет Астилту 07 - Operational System Development	n Development	PE NUMBER AND TITLE 0208006F Mission Planning Systems	PROJECT 673858
<u>e</u>	A. Mission Description Continued	Continued		
555555	EY 1999 (\$ in Thousands) \$1,459 Comp \$3,130 Begai \$3,426 Conti \$6,400 Begai \$1,000 Stand	npleted MPS core software den PFPS software developmitiuned A/W/E development an JMPS migration effort and up Responsible Test Organial	levelopment support ent support /support/integration for the platforms listed above nization (RTO) support	
23333	FY 2000 (\$ in Thousands) \$1,258	ontinue PFPS software development support Continue A/W/E development /support/integration for the platforms listed above Continue JMPS migration effort Continue Responsible Test Organization (RTO) support Total	r the platforms listed above	
<u> </u>	FY 2001 (\$ in Thousands) \$668 Conti \$14,687 Conti \$4,680 Begin \$720 Conti \$20,755 Total	ids) Continue A/W/E development/support/integration for the platforms listed above Continue JMPS migration effort Begin JMPS Combat Capabilities, including PGM migration Continue Responsible Test Organization (RTO) support Total	the platforms listed above gration ort	
ව	B. Budget Activity Justification Mission Planning Systems is in by transportable, non-deployable, an 3.01 which incorporate Y2K fixes began in Jun 99.	ication is in budget activity 7, Operational System Devel the, and portable laptop workstations. AFMSS M K fixes among other new requirements were releas	B. Budget Activity Justification Mission Planning Systems is in budget activity 7, Operational System Development, because the program currently supports deployed AFMSS systems, which include transportable, non-deployable, and portable laptop workstations. AFMSS MPS C2.0, C2.1, and PFPS 3.0 software are operationally fielded. MPS C2.2 and PFPS 3.01 which incorporate Y2K fixes among other new requirements were released and are in the process of fielding to the Combat Air Forces. Development of JMPS v1.0 began in Jun 99.	d AFMSS systems, which include fielded. MPS C2.2 and PFPS orces. Development of JMPS v1.0
<u>с</u>	Project 673858	Pag	Page 2 of 7 Pages	Exhibit R-2 (PE 0208006F)

	RDT&E BUDGET ITEM JU	SET ITEN		STIFICATION SHEET (R-2 Exhibit)	SHEET ((R-2 Exhi	bit)		DATE February 2000	7 2000
BUD 07 .	вирсет астилту 07 - Operational System Development	elopment			PE NUMBER AND TITLE 0208006F MISSI	AND TITLE F Mission	PE NUMBER AND TITLE 0208006F Mission Planning Systems	Systems		PROJECT 673858
<u>(2)</u>	C. Program Change Summary (\$ in Thousands)	S in Thousar	(Spi			FV 1999	FY 2000		FY 2001	Total Cost
558		2000 PBR)				16,204	16,764	•	20,755	TBD
9	Adjustments to Appropriated Value a. Congressional/General Reductions b. Small Business Innovative Research c. Omnibus or Other Above Threshold Reprogram d. Below Threshold Reprogram	ue ons aarch ihold Reprogr	am			-972 -514 -2,342 2,153	-81			
99	f. Other Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR	ce FY 2000 P] PBR	BR			15,415	18,084		20,755	TBD
<u>(D</u>	Significant Program Changes: FY99: BTR/ATR: The AFMSS program was part of a large 1415-2 action requiring a consolidation of numerous sources into several PEs. Funds were BTR'd into the program as part of this 1415-2 and later removed as part of the larger 1415-2 action. The net change to the AFMSS program was -\$174. In addition, -\$15 was for a canceled bill.	ı was part of a I later remove	ı large 1415-2 ıd as part of th	action requirin e larger 1415-2	ig a consolidati 2 action. The n	on of numerou et change to tl	us sources into ne AFMSS pro	several PEs. gram was -\$1'	1415-2 action requiring a consolidation of numerous sources into several PEs. Funds were BTR'd into the ut of the larger 1415-2 action. The net change to the AFMSS program was -\$174. In addition, - \$15 was to the larger 1415-2 action.	into the 15 was for a
<u> </u>	D. Other Program Funding Summary (\$ in Thousands) EX 1999 EX 2000 Actual Estimate	mary (\$ in T) FY 1999 Actual	housands) EY 2000 Estimate	FY 2001 Estimate	Extimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
999	AF RDT&E Other APPN Other Procurement, AF WSC 833040, Theater Air Control System Improvement	6,035	12,633	13,383	17,713	16,253	16,604	16,905	Continuing	TBD
<u>e</u>	Other Procurement, AF, WSC 86190A, Initial Spares	1,447	1,118	1,068	785	558	529	380	Continuing	ТВD
9	Operations & Maintenance,	29,188	32,277	33,794	30,602	32,340	33,621	33,130	Continuing	TBD
	Project 673858		2	Pag	Page 3 of 7 Pages				Exhibit R-2 (PE 0208006F)	E 0208006F)

	RDT&E BUDGET ITEM JU	JSTIFICATION SHEET (R-2 Exhibit)	V SHEET	(R-2 Exhi	ibit)		DATE February 2000	2000
8UD 07	BUDGET ACTIVITY O7 - Operational System Development		PE NUMBER AND TITLE 0208006F MISSI	AND TITLE F Mission	PE NUMBER AND TITLE 0208006F Mission Planning Systems	Systems		PROJECT 673858
(£)	D. Other Program Funding Summary (\$ in The FY 1999 Actual	ousands) FY 2000 FY 2001 Estimate Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
	O&M funds for PE 28006F support the software and hardware maintenance costs of the Air Force Mission Support System (AFMSS) and the Common Mapping Production System. These funds also support the maintenance of the following existing operational systems until replaced by AFMSS: Mission Support System II (MSS IIA) supports existing combat capability for the F-15 and F-16 aircraft mission planning (F/RF-4 and F-111 are now retired); Mission Data Preparation System (MDPS) supports conventional and nuclear mission planning, aircraft/weapons avionics loading, compatibility between evolving B-1B, B-52H avionics, their weapons systems, and USSTRATCOM. O&M funding supported approximately 240 older systems in FY94. By FY00, a similar amount of funding will support over 2900 AFMSS mission planning systems world-wide.	hardware maintenance ntenance of the follow and F-16 aircraft missi ircraft/weapons avion ximately 240 older sy.	costs of the Airing existing option planning (F) ics loading, corstems in FY94.	r Force Missio erational syste (RF-4 and F-1) npatibility bet By FY00, a si	on Support Systems until replac 11 are now reti ween evolving imilar amount	tem (AFMSS) sed by AFMS(ired); Missior B-1B, B-52H of funding wi	and the Common M S: Mission Support S Data Preparation Sy avionics, their weap Il support over 2900	apping System II (MSS /stem (MDPS) ons systems, AFMSS
	There are no other AFMSS core related RDT&E activities for unit level mission planning in the USAF. Over 50 individual aircraft and weapons programs develop their respective software to be used in conjunction with the AFMSS core software. The aircraft and weapons software is a complimentary, synergistic effort that provides specific aircraft and weapons information and functionality to the core AFMSS software. The combined software gives the warfighter the full spectrum of mission planning and combat capabilities for their aircraft or weapon including interoperability with planned Theater Battle Management (TBM) systems.	rities for unit level mis AFMSS core softwarn nality to the core AFM veapon including inter	sion planning in e. The aircraft is ISS software. Toperability with	n the USAF. (and weapons so the combined so the planned Thea	Over 50 indivic software is a co software gives iter Battle Man	thal aircraft at mplimentary, the warfighte agement (TB	nd weapons program synergistic effort tha r the full spectrum o M) systems.	s develop their at provides f mission
Ð	E. Acquisition Strategy The Air Force Mission Support System (AFMSS) program is managed within the Combat Air Forces (CAF) Command and Control (C2) Systems Program Office, Electronic Systems Center, Hanscom AFB, Massachusetts. The AFMSS acquisition strategy leverages military and commercial software integrated on Commercial-Off-The-Shelf (COTS) hardware. AFMSS encompasses evolutionary software and hardware development in an open systems architecture. The contractors for the AFMSS projects are Sanders, Nashua, NH, a Lockheed Martin Company, for the MPS and C-17, KC-10, C-5, C-9, C-141, E-3, E-8, KC-135E/R A/W/Es; Tybrin, Fort Walton Beach, FL, for the PFPS, and Logicon, San Pedro, CA for JMPS. A/W/E development is also performed in-house (government) by Oklahoma City Air Logistics Center (OC-ALC), Tinker AFB, OK; Sacramento Air Logistics Center (SM-ALC), McClellan AFB, CA; Warner Robbins Air Logistics Center (OO-ALC), Hill AFB, UT.	gram is managed with setts. The AFMSS ac SS encompasses evolu ockheed Martin Comj an Pedro, CA for JMP nento Air Logistics Ce OO-ALC), Hill AFB, U	in the Combat / quisition strateg tionary softwar nany, for the Ml S. A/W/E deve enter (SM-ALC TT.	Air Forces (CA y leverages m e and hardwarr PS and C-17, F dopment is also), McClellan A	NF) Command ulitary and corr e development &C-10, C-5, C-0 performed in NFB, CA; Warr	and Control (umercial softv in an open sy -9, C-141, E-3 -house (goven ner Robbins A	72) Systems Progran are integrated on stems architecture. T, E-8, KC-135E/R A mment) by Oklahom ir Logistics Center (n Office, he contractors /W/Es; Tybrin, a City Air WR-ALC),
3	The JMPS is in the development phase. Development and initial migration activities began in FY99. The current plan is to continue development and migration activities in the FY00-FY05 time frame while individual weapon systems transition with planned Operational Flight Program (OFP) upgrades. (U) F. Schedule Profile	and initial migration a ıal weapon systems tra	ıctivities began ansition with pl	in FY99. The anned Operatio	current plan is onal Flight Pro	s to continue c gram (OFP) v	evelopment and mig pgrades.	gration
<u>C</u>	Project 673858	Pa	FY 1999 Page 4 of 7 Pages		EY 2000	5000	FY 2001 Exhibit R-2 (PE 0208006F)	001 : 0208006F)

RDT&E BUDGET ITEM JUSTIFICATION	STIFICATION SHEET (R-2 Exhibit)		DATE F e	February 2000	
BUDGET ACTIVITY 07 - Operational System Development	PENUMBERAND TITLE 0208006F Mission Plan	⊌ो गा⊓E Mission Planning Systems	S	PROJECT 673858	ЕСТ 858
(U) E. Schedule Profile Continued	FY 1999 2 3 4 1	EY 2000 2 3	4	FY 2001 2 3	4
(U) PFPS 3.1 Software Release (U) PFPS 3.1 OT&E Complete (U) MPS C2.1 OT&E Complete (U) MPS C2.2 OT&E Begin (U) MPS C2.2 OT&E Begin (U) MPS C2.2 OT&E Complete (U) MPS C2.2 C (w/ F117) OT&E Begin (U) MPS C2.2C (w/ F117) OT&E Complete (U) MPS Study Complete event X denotes planned event	* * *	× ×	× ×	×	×
Project 673858	Page 5 of 7 Pages		Exhib	Exhibit R-2 (PE 0208006F)	06F)

	RDT&E PROGRAM ELEMENT	AM ELE		/PROJECT C	OST BF	COST BREAKDOWN (R-3)	NN (R-3)		DATE Fe	February 2000	00
908 07	вирсет астилту 07 - Operational System Development	velopmer	īt		PE NUMBER AN 0208006F	PE NUMBER AND TITLE 0208006F Missio	n Plannin	Mission Planning Systems	(0	9 9	РРОЈЕСТ 673858
(£)	A. Project Cost Breakdown (\$ in Thousands)	in Thousand	(S		·		EV 1000	000	EV 200	Ş	EV 2001
5	Primary Software Development						FX 9	6,715	11,640	₹ 0	15,455
3	Aircraft/Weapons/Electronics (A/W/E) Integration Spt.	/W/E) Integr	ation Spt.					100	200	0	300
9	Systems Engineering						4,	4,400	2,640	0	2,800
99	Program Management Test and Evaluation						ζ, ,	2,600	2,823	ω 4	1,300
333	Miscellaneous Total						15,	900 900 15,415	97 97 18,084	t	200 200 20,755
3	B. Budget Acquisition History and Planning Information (\$ in Thousands)	and Planning	Information	(\$ in Thousand	(ছ						
3	Performing Organizations:										
	Contractor or										
	₩.	욉	Award or	Performing	Project						Ę
	Performing or	or Funding Vebicle	Obligation Data	Activity	Office	Total Prior	Budget EV 1000	Budget EV 2000	Budget EV 2001	Budget to	Total
	Development Organiz	Suo Suo		XI.	X T	7771 7 7 7 7	7771 1 1	7007	1007 1 7	A COUNTY OF	11081911
	Logicon (JMPS) CP	CPAF	Jun 99	TBD	TBD	0	3,325	10,650	8,800	Continuing	TBD
	Sanders CP	CPAF	Dec 92	93,773	93,773	93,201	66	0	0	Continuing	TBD
	Tybrin (Ft Walton Beach) Pro	Project Order	Dec 98	TBD	TBD	0	2,500	530	0	Continuing	TBD
	egration Activity	Time & Mat'l	Oct 98	TBD	TBD	0	250	0	0	Continuing	TBD
						4,449	2,867	1,769	2,100	Continuing	TBD
	JMPS Combat Capability TBD	<u>.</u> و	TBD	TBD	TBD				3,680	Continuing	TBD
	Support and Management Organizations	zations		Ë	í			,	0		i d
	FFRDC			TBD	TBD	15,480	4,400	2,640	2,860	Continuing	CRI
	Miscellaneous			TBD	TBD	9,532	1,254	1,775	2,595	Continuing	TBD
	n Organizat		9	í G	Ę	c	Ċ	7	Ċ		C C E
	46 i W (Eglin AFB) Fro	Project Order	Oct 98	UB1	18D	o	07/	07/	07/	Continuing	UBI
ш.	Project 673858			Pag	Page 6 of 7 Pages	es			Exhib	Exhibit R-3 (PE 0208006F))8006F)

RDT&E PROGRAM ELEMENT/PROJECT	/PROJECT COST BREAKDOWN (R-3)	VN (R-3)		DATE Fel	February 2000	
вирсет астииту 07 - Operational System Development	PE NUMBER AND TITLE 0208006F MISSION	NITILE Mission Planning Systems	Systems		PR 67	PROJECT 673858
(U) Government Furnished Property: Contract Method/Type Award or Item or Funding Obligation Delivery Description Vehicle Date Product Development Property N/A Support and Management Property N/A	<u>Total Prior</u> to FY 1999	Budget FY 1999 I	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
Test and Evaluation Property N/A Subtotals Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FX 1999 97,650 25,012 0 122,662	Budget FY 1999 9,041 5,654 720 15,415	Budget EY 2000 12,949 4,415 720 18,084	Budget EY 2001 14,580 5,455 720 20,755	Budget to Complete TBD TBD TBD TBD	Total Program TBD TBD TBD TBD
Project 673858	Page 7 of 7 Pages			Exhibit	Exhibit R-3 (PE 0208006F)	8006F)

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		RDT&E BUDGET ITEM JU		ATION	STIFICATION SHEET (R-2 Exhibit)	(R-2 E)	thibit)		DATE	Februa	February 2000
80D 04	BUDGET ACTIVITY 07 - Operations	BUDGET ACTIVITY 107 - Operational System Development			PE NUMBER 0208021	PE NUMBER AND TITLE 0208021F Inform	PE NUMBER AND TITLE 0208021F Information Warfare Support	arfare Su	lpport		PROJECT 670374
	ŏ	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
670374	:	Electronic Combat Spt, C3 Protection/Multi-Mission, Technology and Spt	2,864	1,368	-	3	3,182	3,272	3,367	0	4,233
	Quantity of	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0
5	A. Mission Description This program responds to Operations (IO) prototyy to CINC tasking, this pridentified by the Unified requirements. The Secrimade this function a par Force as executive agent development and integrainteroperable IO planing scaleable system archite Information Infrastructure quirements are system requirements are system requirements be incorporated integral.	A. Mission Description This program responds to CINC requests for urgently needed technical solutions to operational problems. This program studies, develops and demonstrates Information Operations (IO) prototypes to provide warning, self protection, and support to personnel and equipment against combat systems employed by enemy forces. In response to CINC tasking, this program identifies existing military and commercial research and development efforts which can satisfy unfulfilled operational requirements as identified by the Unified Commands, and quickly bridges the gap between technology developments to meld the technology to meet the warfighter's operational requirements. The Secretary of Defense identified the need for this capability in 1983, and with unanimous approval of the Services and the Unified Commands, JCS made this function a part of the Joint Information Operations Center (JIOC) mission (formerly the Joint Command and Control Warfare Center (JICWC). The Air Force as executive agent is responsible for the total funding of this effort. The Information Operations Planning Tool (IOPT) initiative. IOPT has four overall program objectives: (1) Determine an operational architecture (2) Develop an evolving suite of interoperable IO planing and decision support capabilities, comprised of software, hardware, and communications products. (3) Identify and implement an open, scaleable system architecture which will accommodate growth in functionality, allow functional modules to interact, and remain compliant with evolving Defense Information Infrastructure (DII) common Operating Environment (DOE) standards, and (4) Implement a spiral/evolutionary acquisition process through which user requirements are systematically identified, prioritized, and address a disciplined, risk-mitigated, user-focused process, and through which new concepts and technology	needed tech rotection, an ary and con lges the gap rations Cent rations Cent nding of thi overall prog tities, compri e growth in anvironment , and address	nical solutic d support to mercial resbetween tec between tec is capability is capability er (JIOC) mercial respector. The gram objecti ised of softw functionality (DOE) stan is a disciplin	ons to operat o personnel a earch and de chnology dev in 1983, an nission (form e Informatio ives: (1) Det vare, hardwa y, allow func dards; and (ed, risk-miti,	ional proble and equipme avelopment of elopments of with unanterly the Join of	ems. This pr nt against co efforts which to meld the ti imous appro nt Commanc s Planning T perational ar munications iles to intera it a spiral/ew	ogram studi mbat systen 1 can satisfy echnology tr val of the Se 1 and Contro 'ool (IOPT) chitecture (2 products. (3 ct, and rema olutionary an	es, develops as employed unfulfilled on meet the warvices and the Warfare C initiative. If (2) Develop a (3) Identify an in complian cquisition prough which results and the warvices are the warvices and the warvices are warvices and warvices are warvices are warvices and warvices are warvices are warvices and warvices are warvices and warvices are warvices are warvices and warvices are warvic	and demons iby enemy from artighter's of the Unified Center (JC2W OPT is a five in evolving sond implement with evolving cocess through the concepts.	needed technical solutions to operational problems. This program studies, develops and demonstrates Information otection, and support to personnel and equipment against combat systems employed by enemy forces. In response ary and commercial research and development efforts which can satisfy unfulfilled operational requirements as ges the gap between technology developments to meld the technology to meet the warfighter's operational in need for this capability in 1983, and with unanimous approval of the Services and the Unified Commands, JCS rations Center (JIOC) mission (formerly the Joint Command and Control Warfare Center (JC2WC). The Air nding of this effort. The Information Operations Planning Tool (IOPT) initiative. IOPT is a five-year overall program objectives: (1) Determine an operational architecture (2) Develop an evolving suite of tites, comprised of software, hardware, and communications products. (3) Identify and implement an open, e growth in functionality, allow functional modules to interact, and remain compliant with evolving Defense nvironment (DOE) standards; and (4) Implement a spiral/evolutionary acquisition process through which user and address a disciplined, risk-mitigated, user-focused process, and through which new concepts and technology
55555555	FY 1999 (\$ in Thousands) \$63 May \$252 IO \$880 Infe \$629 EF7 \$81 Sou \$959 C27 \$2,864 Tot	Thousands) Mayberry ACTD IO Planning Process & JIOPP Information Operations Planning System (IC EFX IO Planning System Initiative Sounder ACTD C2W Analysis and Targetting Tool (CATT) Total	ng System (IOPS) itive [ool (CATT)	OPS)							
<u>.</u>	Project 670374			Page	Page 1 of 5 Pages	80			Ш П	xhibit R-2 (Exhibit R-2 (PE 0208021F)

	RDT&E BUDGET ITEM JUSTIFICATION S	STIFICATION SHEET (R-2 Exhibit)	t)	DATE February 2000	ry 2000
97.	ВИDGET АСТИЛТY 07 - Operational System Development	PE NUMBER AND TITLE 0208021F Information Warfare Support	n Warfare Sup	port	PROJECT 670374
9	A. Mission Description Continued				
999	FY 2000 (\$\\$\) in Thousands) \$1,368 Information Operations Planning System (IOPS) \$1,368 Total				
999	FY 2001 (\$ in Thousands) \$1 Program has been phased out. The \$1K is residual and will be used to buy system supplies. \$1	vill be used to buy system su	pplies.		
3	B. Budget Activity Justification This program is in Budget Activity 7, Operational System Development, because it studies, develops and demonstrates IO prototyes to provide warning, self protection, and support to personnel and equipment against combat systems employed by enemy forces. It identifies existing military and commercial research and development efforts which can satisfy unfulfilled operational requirements as identified by the Unified Commands, and quickly bridge the gap between technology developments and meld the technology into the warfighter's operational requirements. The Secretary of Defense identified the need for this capability in 1983, and with unanimous approval of the services and the Unified Commands, JCS made this function a part of the Joint Information Operations Center (JIOC) mission (formerly the Joint Command and Control Warfare (JC2WC)). The Air Force, as executive agent, is responsible for the total funding of this effort.	se it studies, develops and de nemy forces. It identifies ex e Unified Commands, and qu ry of Defense identified the r art of the Joint Information (s responsible for the total fur	monstrates IO proto isting military and cuckly bridge the galeed for this capabil Operations Center (John of this effort.	tyes to provide warning commercial research an p between technology (ity in 1983, and with us IOC) mission (formerly	g, self protection, d development developments and nanimous y the Joint
3	C. Program Change Summary (\$ in Thousands)				
555	Previous President's Budget (FY 2000 PBR) Appropriated Value	<u>FY 1999</u> 2,864 2,375	FY <u>2000</u> 1,368 1,376	FY 2001 1	Total Cost
0	Adjustments to Appropriated value a. Congressional/General Reductions b. Small Business Innovative Research c. Omnibus or Other Above Threshold Reprogram d. Below Threshold Reprogram e. Rescissions	-7 -80 592 -16			
99	f. Other Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR	2,864	1,368	-	4,233
<u> </u>	Significant Program Changes:				
ц	Project 670374 Page 2	Page 2 of 5 Pages		Exhibit R-2 (Exhibit R-2 (PE 0208021F)
		213			

	RDT&E BUDGET ITEM JU	T ITEN		ICATION	STIFICATION SHEET (R-2 Exhibit)	(R-2 Exh	ibit)		DATE FA	February 2000	
BUD 07	вирсет аститту 07 - Operational System Development	pment			PE NUMBER AND TITLE 0208021F Inform	AND TITLE F Informa	PE NUMBER AND TITLE 0208021F Information Warfare Support	re Suppo			РРОЈЕСТ 670374
(£)	D. Other Program Funding Summa	mary (\$ in Th FY 1999 Actual	housands) FY 2000 Ferimate	FY 2001 Fetimate	EX 2002 Fetimate	EY 2003 Ferimate	FY 2004 Ferimate	FY 2005 Ferimate	ر	Cost to	Total Cost
99	AF RDT&E Other APPN			A CONTRACT	Comman		A DE LA CALLACTE	A series		3	
9	E. Acquisition Strategy All major contracts within this Program Element were awarded after full and open competition.	ı Element	were awardeo	l after full and	open competit	ion.					
<u>e</u>	F. Schedule Profile				FY 1999		FY?	FY 2000		FY 2001	
5	(I) Not Amilicable			-	2 3	4	1 2	3 4	-	7	4 € 4
	J J										
Δ.	Project 670374			Pag	Page 3 of 5 Pages				Exhibit	Exhibit R-2 (PE 0208021F)	(208021F)

PEN NUMBER AND TITLE PEN NUMBER AND TITLE State Pen NUMBER AND TITLE		RDT&E PROGRAM ELEMENT	SAM ELE	MENT/PF	I/PROJECT COST BREAKDOWN (R-3)	OST BE	REAKDOV	VN (R-3)		DATE Fe	February 2000	00
A Project Cost Breakdown (\$ in Thousand\$) EY 1999 I bitch mentation and Support	20	обет АСТІVITY - Operational System D o	evelopme	ıt		PE NUMBE 020802	R AND TITLE 1F Inform	ation War	fare Supp	ort	<u>.</u> 9	РРОЈЕСТ 670374
Parameter Para	9	ŀ	\$ in Thousand	(§				3				
Facilities Fac	E	Mayherry ACTD							§	FY 200	a	FY 2001
Pacifities Pacifities Pacifities Pacifities Pacifities Pacifities Pacifities Pacifities Pacifities Pacific Pacific	3								ž 72	0		•
Pagineering Services 2,177 Pagineering Organizations 2,1864 Pagineering Organizations Pagineering Organizations 2,1864 Pagineering Organizati	5								0	0		
SME Total 2,864 B. Budget Acquisition History and Planning Information (S in Thousands) Performing Organizations: Government Contraction Contract Contraction Performing Detection Project Activity Project Detect Dete	36							2,	717	0 39£,1	- ~	
B. Budget Acquisition History and Planning Information (\$\$\$\$ in Thousand\$\$\$) Performing Organizations: Contract Contract Activity Office of EAC Total Prior of EAC Budget of EY 2000 FY 2000	33	SME Total						2,6	0 864	0 1,368	- m	
Performing Organizations: Contractor or Contractor or Contractor or Government Contractor or Method/Type Award or Ending Performing Project Total Prior Budget Budget Budget Budget Budget Budget Budget Budget Pry 2000 FY 1999 FY 2000 FY 200	3		y and Plannin	g Information	(\$ in Thousand	ଜ						
Contractor of Government Contract Contract Government Performing Method/Type Award or Euroding Obligation Performing Activity Office Activity Office I Total Prior Budget Budget FY 1999 FY 1999 FY 1999 FY 1999 FY 1999 FY 2000 FY. Budget Budget Budget Budget Budget FY 1999 FY	9	-										
Method/Type Award or or Funding Performing Project Total Prior Budget Bud	,	Contractor or	Contract									
or Funding Obligation Activity Office Lotal Prop Budget Bit opment Organizations e.& Techn DDForm 448 Jan 2 91 FY 1999 FY 2000 FY e. & Techn DDForm 448 Jan 2 91 77 568 AF Form 9 Aepon 448 Jan Jun 2 91 77 568 nics AF Form 9 Sep 2 91 629 629 langement Organizations DDForm 448 Jan 2 91 629 629 action Organizations DDForm 1610 Jan-Sep 2 91 18 75 AF Form 9 Feb 2 91 18 75 75			Method/Type	Award or	Performing	Project	! !		,	,		
Venicle Date EAC 10 FY 1929 FY 2000 FX c & Techn DDForm 448 Jan 2 91 880 800 AF Form 9 Feb 2 91 175 AF Form 9 Aug 2 91 77 568 DDForm 448 Jan Jun 2 91 629 629 langement Organizations BDForm 448 Jan 2 91 629 629 action Organizations AF Form 9 Feb 2 91 18 75		āu	or Funding	Obligation	Activity	Office	Total Prior	Budget	Budget	Budget	Budget to	Total
AF Form 9 Feb 2 91 880 800 AF Form 9 Aug 2 91 175 AF Form 9 Aug 2 91 77 TBD 2 91 77 568 DDForm 448 Jan Jun 2 91 629 Inagement Organizations 2 91 54 DDForm 1610 Jan-Sep 2 91 18 DDForm 1610 Jan-Sep 2 91 18 AF Form 9 Feb 2 91 18 AF Form 9 Feb 2 91 75 Page 4 of 5 Pages		Derroloument Organiz	<u>venicie</u>	<u>Date</u>	EAC	FAC	to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
AF Form 9 Feb 2 91 175 568 AF Form 9 Aug 2 91 77 76 TBD 2 91 77 76 TBD 2 91 77 76 DDForm 448 Jan Jun 2 91 629 anagement Organizations DDForm 448 Jan 2 91 629 DDForm 1610 Jan-Sep 2 91 18 AF Form 9 Feb 2 91 75 Page 4 of 5 Pages		Bell Aerospace & Techn T	DForm 448	Ian	C	10		880	800		c	1 680
AF Form 9 Aug 2 91 77 TBD 2 91 568 DDForm 448 Jan Jun 2 91 629 anagement Organizations DDForm 448 Jan 2 91 629 DDForm 1610 Jan-Sep 2 91 854 DDForm 1610 Jan-Sep 2 91 18 AF Form 9 Feb 2 91 75		1	AF Form 9	Feb	7	91		175)		0	175
TBD			AF Form 9	Aug	2	91		77			0	77
DDForm 448 Jan Jun 2 91 956 nics AF Form 9 Sep 2 91 629 lanagement Organizations 2 91 54 DDForm 448 Jan 2 91 18 DDForm 1610 Jan-Sep 2 91 18 ation Organizations AF Form 9 Feb 2 91 75			rbd		2	91			268			268
nics AF Form 9 Sep 2 91 629 lanagement Organizations 2 91 54 DDF orm 448 Jan 2 91 18 DDF orm 1610 Jan-Sep 2 91 18 action Organizations AF Form 9 Feb 2 91 75 Page 4 of 5 Pages Page 4 of 5 Pages Page 4 of 5 Pages			ODForm 448	Jan Jun	2	91		956		1	0	957
lanagement Organizations DDForm 448 Jan 2 91 54 DDForm 1610 Jan-Sep 2 91 18 attion Organizations AF Form 9 Feb 2 91 75 Page 4 of 5 Pages			AF Form 9	Sep	2	91		629				629
DDForm 448 Jan 2 91 54 DDForm 1610 Jan-Sep 2 91 18 lation Organizations 2 91 75 AF Form 9 Feb 2 91 75 Page 4 of 5 Pages Page 4 of 5 Pages Argument Argument		Support and Management Organ	nizations									
DDForm 1610 Jan-Sep 2 91 18 lation Organizations AF Form 9 Feb 2 91 75 Page 4 of 5 Pages			ODForm 448	Jan	2	91		54			0	54
AF Form 9 Feb 2 91 75 Page 4 of 5 Pages			DDForm 1610	Jan-Sep	2	91		18			0	18
AF Form 9 Feb 2 91 75 Page 4 of 5 Pages		nd Evaluation Organizat	suo									
Page 4 of 5 Pages			AF Form 9	Feb	7	91		75			0	75
Page 4 of 5 Pages												
2022 to 1022 t	4	Project 670374			Page	e 4 of 5 Pag	sə			Exhibi	t R-3 (PE 02)	08021F)

RDT&E PROGRAM ELEMENT/PROJECT	COST BREAKDOWN (R-3)	WN (R-3)		DATE Fe	February 2000	o
BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0208021F Information Warfare Support	ation War	are Supp	ort	PR 67	PROJECT 670374
(U) Government Furnished Property: Contract Method/Type Award or Item or Funding Obligation Delivery Description Vehicle Date Date Product Development Property Support and Management Property Test and Ryaluation Property	Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
Subtotals Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 1999	Budget 2,717 72 75 2,864	Budget 1,368 1,368 1,368	Budget EY 2001 1 1	Budget to Complete 0 0 0 0	Total Program 4,086 72 75 4,233
Project 670374	Page 5 of 5 Pages	;		Exhibi	Exhibit R-3 (PE 0208021F)	8021F)

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RDT&E BUDGET ITEM JU	USTIFIC	ATION	STIFICATION SHEET (R-2 Exhibit)	(R-2 Ex	hibit)		DATE	February 2000	y 2000
BUDGET ACTIVITY			PE NUMBER	PE NUMBER AND TITLE					PROJECT
07 - Operational System Development			0208031	F WRM-	EQUIPM	0208031F WRM-EQUIPMENT/SECONDARY ITEMS	ONDAR	Y ITEMS	674668
COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
674668 Shelter Development	1,440	1,450	1,475	2,557	2,775	2,830	2,887	2,887 Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

Combat Support; PE64708f - Civil, Fire, Environmental, Shelters, and the 3600 portion of PE28031f - War Reserve Material) under PE 64617. This will meet the intent of the House action to eliminate smaller PEs and provide a more cohesive, manageable CE Readiness modernization effort. This consolidation will begin in February 2000 and SAF/AQPS, HQ USAF/ILSR and HQ USAF/ILEX are in the process of consolidating three small dollar Civil Engineer (CE) readiness R&D programs (PE64617f - Agile should be complete by the beginning of FY01 (October 2000).

(U) A. Mission Description

(U) A. Mission Description

- billeting, industrial, and air field capability to support up to 68,200 combat troops and 822 aircraft at 15 austere locations by building complete temporary bases from the the current Joint Chiefs of Staff (JCS) wartime planning scenario of two nearly simultaneous Major Theater Wars (2MTW), this equipment provides theater warfighters 1. This program supports Air Force (AF) Bare Base Mobility Equipment, also known as Harvest Falcon (HF) and Harvest Eagle (HE). Designed and sized to support ground up. Of the two systems, HF is the newest and fields the greatest capability (housekeeping plus air base infrastructures). The HF system provides capability directed in the FY90-94 Defense Planning Guidance (DPG) that initially tasked the Air Force to support United States Central Command (USCENTCOM) Rapid Deployment Forces (RDF) and save critical airlift resources through theater prepositioning. Subsequent DPGs have continued this requirement. Harvest Falcon remains a top priority procurement requirement of the Commander-In-Chief/Central Command.
- result, the majority of HF and HE sets currently in the inventory require comprehensive repair or replacement. A majority of the equipment has been used for over three Restore Hope, Sea Signal, Uphold Democracy, Joint Endeavor, Desert Focus, Desert Fox, Noble Anvil and Allied Force. Significant quantities of Harvest Falcon and Military-Operations-Other-Than-War (MOOTW) throughout the world. These include Operation Southern Watch, Provide Relief, Provide Promise, Provide Comfort, Harvest Eagle assets were successfully employed during Operations Allied Force and Noble Anvil to support operational and humanitarian requirements in Kosovo, continued demand for the equipment to support MOOTW. This high Operational Tempo (OPTEMPO) utilization continues to take its toll on system assets. As a Albania, Italy, and Northern Turkey. The unparalleled success of the AF Bare Base program in providing critically needed austere basing facilities has resulted in 2. The outstanding reputation enjoyed by the AF Bare Base program, established during the Gulf War, has continued to grow in successive years, well beyond its original design parameters. Equipment modernization and reconstitution funding thus remains a crucial issue.

Page 1 of 5 Pages **Project 674668**

Exhibit R-2 (PE 0208031F)

	RDT&E	BUDGET ITEM JU	STIFICATION SHEET (R-2 Exhibit)	DATE February 2000	000
80D(07 -	вирсет Астіvіту 07 - Operational Sys i	эсет аститу - Operational System Development	PE NUMBER AND TITLE 0208031F WRM-EQUIPMENT/SECONDARY ITEMS	ARY ITEMS	РРОЈЕСТ 674668
3	A. Mission Description Continued	n Continued			
	3. The Air Force Bare majority of HF and HE Force concept demand: support these moderniz	3. The Air Force Bare Base program has had unparalleled success meeting th majority of HF and HE equipment has been in use well beyond design parame Force concept demands systems that are lighter leaner, more maintainable, an support these modernization and reconstitution requirements.	3. The Air Force Bare Base program has had unparalleled success meeting the demands in support of MOOTW. This has taken its toll on equipment, and as a result the majority of HF and HE equipment has been in use well beyond design parameters and requires comprehensive repair or replacement. In addition, the Expeditionary Air Force concept demands systems that are lighter leaner, more maintainable, and more deployable. Research, Development, Testing, and Evaluation (RDT&E) funds support these modernization and reconstitution requirements.	ll on equipment, and a In addition, the Expec nd Evaluation (RDT&	is a result the ditionary Air E) funds
5555	FY 1999 (\$ in Thousands) \$1,227 Ini \$213 Co \$1,440 Tot	nds) Initiated EMD for Deployable Waste Management System Continued other technical support Total	stem		
99999	FY 2000 (\$ in Thousands) \$590 Inii \$600 Co \$260 Co	nds) Initiate EMD for Bare Base Systems Cold Weather Package Continue EMD for Deployable Waste Management System Continue other technical support Total	ıckage ystem		
99999	FY 2001 (\$ in Thousands) \$300 Co \$860 Co \$315 Co	nds) Continue EMD for Bare Base Systems Cold Weather Package Continue EMD for Deployable Waste Management System Continue other technical support Total	Package ystem		
9	B. Budget Activity Justification This program is in Budget Activit 'footprints', required transport airl	B. Budget Activity Justification This program is in Budget Activity 7 because it supports development of operation of the footprints, required transport airlift sorties, and increase operational efficiencies.	B. Budget Activity Justification This program is in Budget Activity 7 because it supports development of operational HF/HE equipment in modernized configurations which reduce deplyment footprints', required transport airlift sorties, and increase operational efficiencies.	which reduce deplym	ent
Δ.	Project 674668	Page	Page 2 of 5 Pages	Exhibit R-2 (PE 0208031F))208031F)

	RDT&E BUDGET ITEM JU	JUSTIF	ICATION	STIFICATION SHEET (R-2 Exhibit)	R-2 Exhi	bit)	ď	DATE February 2000	, 2000
BUE 07	BUDGET ACTIVITY 07 - Operational System Development			PE NUMBER AND TITLE 0208031F WRM	AND TITLE = WRM-EC	UIPMENT	/SECOND	PE NUMBER AND TITLE 0208031F WRM-EQUIPMENT/SECONDARY ITEMS	PROJECT 674668
(D)	C. Program Change Summary (\$ in Thousands)	વ			FY 1999	FY 2000		FY 2001	Total Cost
99	Previous President's Budget (FY 2000 PBR) Appropriated Value				1,466	1,467	1	1,475	TBD
9	Adjustments to Appropriated Value a. Congressional/General Reductions b. Small Business Innovative Research c. Omnibus or Other Above Threshold Reprogram d. Below Threshold Reprogram e. Rescissions	.			-18	6-			
99	f. Other Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR	•			1,440	1,450		1,475	TBD
9	Significant Program Changes:								
9	D. Other Program Funding Summary (\$ in Thousands) EX 1999 EX 2000 Actual Estimate	ousands) FY 2000 Estimate	FY 2001 Estimate	EY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
999									
9	econdary 35,399 WSC	46,455	50,021	27,421	26,809	20,148	19,348	Continuing	
	Project 674668		Pag	Page 3 of 5 Pages				Exhibit R-2 (PE 0208031F)	E 0208031F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2000
02 04	вирсет астилту 07 - Operational System Development	PE NUMBER AND TITLE 0208031F WRM-EQUIPMENT/SECONDARY ITEMS	PROJECT PROJECT 674668
Ð	E. Acquisition Strategy The SPO is evaluating and testing commercial solutions to determine options for militarizing commercially-available products for cold weather systems and wast management systems. It will also evaluate work performed by Wright Laboratories, which has identified plasma-arc technology as a potential solution to safely, effectively and efficiently incinerate medical and hazardous wastes. This technology also provides capability to eliminate other waste materials, such as solid wastes/garbage, and other materials placed in landfills. Contracts will be competitive, firm fixed price.	to determine options for militarizing commercially-available products for cold weather systems and waste med by Wright Laboratories, which has identified plasma-arc technology as a potential solution to safely, lous wastes. This technology also provides capability to eliminate other waste materials, such as solid Contracts will be competitive, firm fixed price.	d weather systems and waste potential solution to safely, materials, such as solid
E	F. Schedule Profile		
9	1 BARE BASE COLD WEATHER PKG	FY 1999 2 3 4 1 2 3 4	$\frac{\text{FY} 2001}{2}$ 3 4
9	- Release RFP - Contract Award	×	
333	- Conduct Verification Testing - Milestone III Decision	×	×
355	DEPLOYABLE WASTE MGT SYS - Initiate Waste Management Study - Complete Waste Management Study	*	
E E	- Milestone I/II Decision	×	×
36_	- Contract Awatu - Phase I Milestone III Decision		×
<u>. </u>	Project 674668	Page 4 of 5 Pages	Exhibit R-2 (PE 0208031F)

	RDT&E PROGRAM ELEMENT	AM ELE		PROJECT C	SOST BE	COST BREAKDOWN (R-3)	WN (R-3)		DATE F 6	February 2000	000
800 07	BUDGET ACTIVITY 07 - Operational System Development	/elopme	nt		PE NUMB 02080 3	PE NUMBER AND TITLE 0208031F WRM-EQUIPMENT/SECONDARY ITEMS	EQUIPME	NT/SECO	NDARY IT	EMS	РРОЈЕСТ 674668
9	A. Project Cost Breakdown (\$ in Thousands)	n Thousane	(Sp								
(E)	Contracts						귉	FY 1999 250	FY 2000	31 c	FY 2001 530
3	·							696	480	. 0	460
3	_							0	5	50	120
99	Material/Equipment Other Technical Support						-	0 221	20	20	315
39	Total						1,	1,440	1,450	2 0	1,475
9	B. Budget Acquisition History and Planning Information (\$ in Thousands)	nd Plannin	g Information	(S in Thousan	(Sp						
3	Performing Organizations:										
	Contractor or Cont	Contract Method/Tyne	Award or	Performino	Project						
		or Funding	Obligation	Activity	Office	Total Prior	Budget	Budget	Budget	Budget to	Total
	Activity	Vehicle	Date	EAC	EAC	to FY 1999	FY 1999	EY 2000	FY 2001	Complete	Program
	ganiz	<u>su</u>									
	Bare Base Systems Cold C/FP	ď.	3Qtr/FY00	910	910	0	0	290	300	Continuing	TBD
		Ė	0028777	0.00	9	¢					Í
	Management System	÷	4Qtr/r y 99	3,948	3,948	0	1,440	860	1,175	Continuing	OBT.
	Management System Support and Management Organizations	rations									
	Test and Evaluation Organizations	S S									
						Total Prior	Budget	Budget	Budget	Budget to	Total
	<u>Subtotals</u>					to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
	Subtotal Product Development					0	1,440	1,450	1,475	TBD	
	Subtotal Support and Management										
	Subtotal Test and Evaluation										
	Total Project					0	1,440	1,450	1,475	TBD	TBD
т	Project 674668			Pa	Page 5 of 5 Pages	žes			Exhib	Exhibit R-3 (PE 0208031F))208031F)
										1	

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PE NUMBER: 0208060F PE TITLE: Theater Missile Defenses

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	JSTIFIC	ATION	SHEET	(R-2 Ex	hibit)		DATE		February 2000
BUDGET ACTIVITY 07 - Operation	BUDGET ACTIVITY 07 - Operational System Development			PE NUMBER AND TITLE 0208060F Theat	RAND TITLE	PE NUMBER AND TITLE 0208060F Theater Missile Defenses	e Defens	es		
	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	30,571	25,904	19,824	0	0	0	0	0 Continuing	TBD
674478	Command, Control, Communications, Computers, and Intelligence Enhancements	22,044	17,723	19,824	0	0	0	0	0 Continuing	TBD
674479	Attack Operations Concept Development	8,527	8,181	0	0	0	0	0	0 Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

(U) A. Mission Description

Attack Operations Decision Aid (AODA), Automatic Application of Intelligence Preparation of Battlespace (A2IPB) and Joint TADIL-J Range Extension (JRE)] reduce timelines required to negate the theater missile threat by increasing interoperability, improving battle management tools, and providing accurate target data via datalinks improvements to existing operational capabilities, developing and evaluating prototypes, demonstrating as well as simulating modifications through operational concept for Offensive Counterair (Attack Operations). Attack Operations focuses on improving the ability to locate, identify, target and destroy theater missiles and supporting infrastructure, including theater missile threats in production, deployment, prior to and during launch, as well as soon after launch before critical mobile targets are able to egress to hide locations. The foundation for Attack Operations is improved C4I, advanced sensors, target identification capabilities, CONOPS, training, tactics and demonstrations, and coordinating the transition of these capabilities to operational systems. BM/C4I projects [including, for example, Dynamic Battle Management, Computers, and Intelligence (BM/C41) enhancements and improvements to existing Attack Operations systems and procedures. AF TMD concentrates on defining Air Force Theater Missile Defense/Time Critical Target (TMD/TCT) effort is focused in two areas: Battle Management/Command, Control, Communications, procedures, and requirements development for offensive counterair and integration with defensive systems.

(U) B. Budget Activity Justification

This program is in Budget Activity 7 because its projects are upgrades to existing operational systems.

Page 1 of 12 Pages

Exhibit R-2 (PE 0208060F)

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ION SHEET (R-2 Exhi	bit)	DATE February 2000	ry 2000
20	вирсет астилту 07 - Operational System Development	PE NUMBER AND TITLE 0208060F Theater Missile Defenses	Missile Defens	Se	
9	C. Program Change Summary (\$ in Thousands)	FY 1999	FY 2000	FY 2001	Total Cost
58	Previous President's Budget (FY 2000 PBR) Annonriated Value	30,352	26,129	28,551	TBD
3	Adjustments to Appropriated Value				
	 a. Congressional/General Keductions b. Small Business Innovative Research 	-/05 -1,004	£8 .		
	c. Omnibus or Other Above Threshold Reprogram d. Below Threshold Reprogram	1,394	-142		·
	e Rescissions f Other	-171			TRD
99	Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR	30,571	25,904	-8,727 19,824	TBD
9	Significant Program Changes: PE 28060F was reduced across the FYDP to provide funding for higher AF priority programs.	н AF priority programs.			
					- Lo
		Page 2 of 12 Pages		Exhibit R-2 (I	Exhibit R-2 (PE 0208060F)

	RDT&E BUDGET ITEM JU	STIFIC/	ATION S	STIFICATION SHEET (R-2A Exhibit)	R-2A E	xhibit)		DATE	February 2000	y 2000
BUDGET 07 - 0	BUDGET ACTIVITY 07 - Operational System Development			PE NUMBER 0208060	PE NUMBER AND TITLE 0208060F Theat	PE NUMBER AND TITLE 0208060F Theater Missile Defenses	e Defens	es		PROJECT 674478
	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
674478	Command, Control, Communications, Computers, and Intelligence Enhancements	22,044	17,723	19,824	0	0	0	0	0 Continuing	TBD

A. Mission Description

for Offensive Counterair (Attack Operations) against TCTs. The Combat Air Force (CAF) CONOPS for C2 Against Time Critical Targets and Air Superiority Mission Theater Missiles and Time Critical Targets (TCTs) by increasing interoperability, improving battle management tools, and providing accurate target data via datalinks Battle Management, Command, Control, Communiteations, Computers, and Intelligence (BMC41) enhancements are needed to reduce timelines required to negate Area Plan (MAP) provide the foundation. The BM/C4I program encompasses:

- 1) Dynamic Battle Management (DBM), the CAF vision for providing flexible, centralized C2 throughout conflict spectrum to meet Joint Vision 2010 objectives. Will allow JFACC to tailor decentralized execution to best meet the Rule of Engagement (ROE) and span of control requirements enabling prosecution of any TCT. DBM will identify technical capabilities and migration path required to support DBM environment consisting of wide area connectivity, decision support tools, and shared information.
- 2) Automated Planning Tools / Decision Aids which prototype and demonstrate advanced decision aid capabilities to upgrade the battle management tools and infrastructure to better execute the Theater Missile Defense (TMD) mission. Examples include the integration of the Time Critical Target Aid (TCTA) and Joint Defensive Planner (JDP) into Theater Battle Management Core Systems (TBMCS)/ Global Command and Control System (GCCS) architecture as well as the development and migration of the Attack Operations Decision Aid (AODA) into TACS platforms.
- 3) Intelligence Preparation Of Battlespace (IPB) which enables the Commander and supporting staff to visualize the full spectrum of adversary capabilities and course development of a software Automated Assistance with IPB (A2IPB) tool for TBMCS/GCCS to assist the intelligence analyst at a Joint Intelligence Center (JIC), and the of actions (COAs) across all dimensions of the battlespace. Examples include the revision of the methodology for the IPB process as it supports TMD; development of an information architecture populated with linked digital products; generation of training material for use in Air Force schoolhouse and field IPB training; and Intel/Ops Planner at an AOC.
- 4) Data Link Connectivity which provides upgrades to existing Air Force platforms to better utilize existing communications systems. These include Joint Tactical Information Dissemination System (JTIDS) TMD Message Set Integration and JTIDS gateways to extend range beyond line of sight and interface with National Fechnical Means (NTM) to provide attack and early launch reporting to theater

Project 674478

Page 3 of 12 Pages

Exhibit R-2A (PE 0208060F)

	RDT&E	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 2000
BUDK 07 -	вирбет астічіту 07 - Operational Sys	BUDGET ACTIVITY O7 - Operational System Development	PE NUMBER AND TITLE 0208060F Theater Missile Defenses	PROJECT 674478
<u>(</u>	A. Mission Description Continued	<u>yn Continued</u>		
9	FY 1999 (\$ in Thousands)	rds		
£	\$6,316 \$5,940	Conducted (DBM operations onboard AWACS and JSTARS live-fly platforms during EFX 99. Continued to develon IPB evolutionary prototypes (FPs) for TBMCS and Air Intelligence Agen	Conducted (DBM operations onboard AWACS and JSTARS live-fly platforms during EFX 99. Continued to develop IPB evolutionary prototypes (EPs) for TBMCS and Air Intelligence Agency's Virtual Production environment: demonstrate	roduction environment: demonstrate
<u> </u>	\$6.383	improved automated procedures and IPB system capabilities in Ops Concept Demonstrations (OCDs) Completed AODA spiral 1 prototype development and EFX 99 demonstration; integrate and demonstration	improved automated procedures and IPB system capabilities in Ops Concept Demonstrations (OCDs). Completed AODA spiral 1 prototype development and EFX 99 demonstration: integrate and demonstrate JTE concept in laboratory (single site):	concept in laboratory (single site):
,		completed ATR/TCTA integration and EFX 99 demon effort; utilized TCT test bed to improve integration int	completed ATR/TCTA integration and EFX 99 demonstration; began Intelligence Surveillance Recce (ISR) Real Time Requirements definition effort; utilized TCT test bed to improve integration into operational systems and demonstrated integrated capabilities	Real Time Requirements definition
99	\$3,405 \$22,044	Completed JRE prototype development, EFX 99 demo	Completed JRE prototype development, EFX 99 demonstration, and implementation plan; performed kill chain based C4I analysis. Total	in based C4I analysis.
9	FY 2000 (\$ in Thousands)	(spu		
<u>(</u> E)	\$4,268	Integration of DBM concepts and prototype capabilities into GTACS and conduct operations experiments during EFX 00.	Integration of DBM concepts and prototype capabilities into TMD/TCT cell. Develop upgraded capability for Air Operations Center (AOC) and GTACS and conduct operations experiments during EFX 00.	or Air Operations Center (AOC) and
9	\$5,893	Continue to develop IPB evolutionary prototypes (EPe improved automated procedures and IPB system capal	onary prototypes (EPs) for TBMCS and Air Intelligence Agency's Virtual Production environment; demonstrate and IPB system capabilities in Ops Concept Demonstrations (OCDs) and Joint exercises. Complete Area	oduction environment; demonstrate nt exercises. Complete Area
ű.	¢1 010	Limitation module development and conduct FYOU EFX demonstration.	FX demonstration.	Contract of the state of the st
9		complete ACDA spiral 2 prototype development, commune to develop 11E and conduct EFA to define targeting). Kickoff ISR-Real Time prototype development effort based on FY99 analysis. Maintain Thinto operational systems and demonstrate integrated capabilities in operational concept demonstrations.	complete ACLA spiral z prototype development, commune to develop 1 i.e. and conduct ErA to demonstrations (distributed, conductation targeting). Kickoff ISR-Real Time prototype development effort based on FY99 analysis. Maintain TMD Cell Testbed to improve integration into operational systems and demonstrate integrated capabilities in operational concept demonstrations.	ons (uisurouted, condobrance)
9	\$2,743	Continue to explore communications improvements the in OCDs, CINC experiments, and Joint Exercises.	Continue to explore communications improvements that compress Theater Missile engagement timelines and demonstrate integrated capabilities in OCDs, CINC experiments, and Joint Exercises.	demonstrate integrated capabilities
9	\$17,723	Total		
99	FY 2001 (\$ in Thousands) \$6,165 Cor	nds) Continue to develop IPB evolutionary prototypes (EPs	ontinue to develop IPB evolutionary prototypes (EPs) for TBMCS and Air Intelligence Agency's Virtual Production environment; demonstrate	oduction environment; demonstrate
<u>(</u>	\$5,292	Complete AODA spiral 2 prototype development and	Improved automated procedures and IPB system capabilities in Ops Concept Demonstrations (OCDS), CINC experiments and joint exercises. Complete AODA spiral 2 prototype development and conduct EFX 00 demonstration; continue to develop JTE and conduct EFX 00	experiments and joint exercises. E and conduct EFX 00
Œ	GD 61 052	integration into operational systems and demonstrate i	definoustiation (distributed, contabotative targeting), sickout istr-near time prototype development effort, mannam 101 testbed to improve integration into operational systems and demonstrate integrated capabilities in CINC experiments and joint exercises.	inian 1C1 restord to inprove tercises.
<u> </u>	41,022	Continue to explore communications improveniens u	Continue to exprote communications improvements that compress thearet missine engagement unformes and ucinotistate integrated capabilities	. Uchionshaic micgraicu capaomines
۵.	Project 674478	Page	Page 4 of 12 Pages	Exhibit R-2A (PE 0208060F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	IFICATION	SHEET (R-2A Exh	nibit)	Ö	DATE February 2000	000
8UD 07	вирсет астіліту 07 - Operational System Development		PE NUMBER AND TITLE 0208060F Theat	AND TITLE F Theater	PE NUMBER AND TITLE 0208060F Theater Missile Defenses	fenses		РРОЈЕСТ 674478
9	A. Mission Description Continued							
(3)	FY 2001 (\$ in Thousands) Continued in OCDs CINC experiments and Joint Exercises	oint Exercises						
999	\$4,626 Conduct BMC4I and Attack Operations Operational Concept Demonstrations. \$2,689 Conduct development of prototype JSTARS ATR HW & SW for multisensor application in the TCTA. \$19,824 Total	tions Operational	Concept Demo W & SW for m	onstrations. ultisensor appl	lication in the T	rcta.		
<u> </u>	B. Project Change Summary - FY2001 budget is inclusive of BMC4I initiatives and At AF higher priorities.	ttack Operations.	The FY01-05 t	oudget is redu	ced to reflect th	ae impact due	Attack Operations. The FY01-05 budget is reduced to reflect the impact due to budget constraints and funding	and funding
<u>(</u>	C. Other Program Funding Summary (\$ in Thousands) EY 1999	EY 2001 Extimate	EY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
999	fense	4,000 for BMC4I intero	4,000 perability evalu	4,000	4,000 totype develop	4,000 ment.		TBD
9	D. Acquisition Strategy HQ Electronic Systems Center (ESC) provides program existing C41 assets will complement the Attack Operatio C41 analyses and demonstrations are specifically targets JROC Mission Need Statement (MNS) and are consister requirements and fielding of proposed material solution contracts will be used for those systems where engineer used to support the requirements definition phase of TN selection process will be followed.	anagement for the effort with combagainst operations with the Air Force vill continue beyo change proposal improvements. It	e concept explo bined participati al deficiencies it e and Joint TMI nd concept expl nd concept expl s are appropriat n those areas wl	ration of C4I e	inhancements. mal Concept De TMD Mission accordance wi appropriate pro igineering and r ial solutions as	Prototypes an emonstrations. Area Plan (N th Joint Doctri gram element Technical Ana re necessary tr	management for the concept exploration of C4I enhancements. Prototypes and analysis of improvements to one effort with combined participation in Operational Concept Demonstrations. These Attack Operations and against operational deficiencies identified in the TMD Mission Area Plan (MAP), are traceable to the AF and with the Air Force and Joint TMD CONOPS in accordance with Joint Doctrine. Integration of TMD swill continue beyond concept exploration in the appropriate program element for a particular system. Exist ing change proposals are appropriate. Systems Engineering and Technical Analysis (SETA) contracts will be improvements. In those areas where new material solutions are necessary to correct a deficiency, the sour	
<u>e</u>	E. Schedule Profile		FY 1999		FY 2000	000	FY 2001	10
ш.	Project 674478	Pag	Page 5 of 12 Pages	8	٠		Exhibit R-2A (PE 0208060F)	0208060F)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	N SHEET (R	-2A Exhibi	t)	DATE	Febru	February 2000	
BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0208060F Theat	PE NUMBER AND TITLE 0208060F Theater Missile Defenses	sile Defense	es		PROJECT 67447 8	PROJECT 674478
(U) E. Schedule Profile Continued	X 199		Y 200	,		Y 200	,
(U) TPS-75 Expert Missile Tracker Prototypes/Contingency Support	2	4	2 3	4	_	3	4
(U) Establish BMC4I prototype development plan and schedule. Annual	*		×			×	
(U) JEFX demonstrations (U) Demonstrate automated IPB procedures and system capabilities in	*	*	×	×			×
Ops Concept (U) CINC experiments and Joint Exercises. (U) Evaluate use of C2 planning/decision aids. Annual Review.	*	*	×	×	N	×	×
		*		×			×
X- Planned Start Date							
Project 674478	Page 6 of 12 Pages			Щ	nibit R-2/	Exhibit R-2A (PE 0208060F))60F)
	000						

	RDT&E PROGRAM ELEMENT	SAM ELE		/PROJECT CO	OST BF	COST BREAKDOWN (R-3)	WN (R-3)		DATE Fe	February 2000	8
01 01	вирсет астилту 07 - Operational System Development	evelopmer	nt		PE NUMBI 020806	PE NUMBER AND TITLE O208060F Theater Missile Defenses	r Missile I	Jefenses		<u>8</u>	РRОЈЕСТ 674478
9	A. Project Cost Breakdown (\$ in Thousands)	<u>s in Thousand</u>	(SI				ì			ç	
Œ	Dynamic Battle Management (DBM)	DRM					FY 1999	<u>k 1999</u>	EY 2000 4 268	31 ×	FY 2001
9	Intelligence Preparation of Battlespace (IPB)	lespace (IPB)					5.6	5.940	5.893	33 25	6.165
3	Automated Decision Aids/Planning Tools	ning Tools					9	6,383	4,819	6)	5,292
<u> </u>	JTIDS/Link-16 Integration & Beyond LOS Capability	Seyond LOS C	apability				3,4	3,405	2,743	13	1,052
<u> </u>	Operations Concept Demonstrations and CINC Exercises Joint STARS ATC/ATR Demonstration	ations and CIN	VC Exercises								4,626
3	Total						22,(22,044	17,723	33	19,824
9	B. Budget Acquisition History and Planning Information (\$ in Thousands)	and Plannin	g Information	(S in Thousand	ଜ						
3	Performing Organizations:										
		Contract									
	₩.	2	Award or	<u>Performing</u>	Project						
	gui	31	Obligation	Activity	Office	Total Prior	Budget	Budget	Budget	Budget to	Total.
	Activity	Vehicle	<u>Date</u>	EAC	EAC	to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
	opment Organiz	tions									
		CPFF	Oct 97	N/A	N/A		2,879	3,080	2,000	Continuing	TBD
		T&M	Dec 97	N/A	N/A		2,339	0	0		2,339
	<u>(</u>	T&M	Dec 97	N/A	N/A		2,415	0	0		2,415
	В)	T&M	May 96	N/A	N/A		3,160	3,090	2,812	Continuing	TBD
	ita Base)	T&M	May 96	N/A	N/A		1,534	1,170	1,100	Continuing	TBD
	•	T&M	Oct 97	N/A	N/A		2,119	405	325	Continuing	TBD
		Γ&M	Mar 96	N/A	N/A		1,945	1,820	3,259	Continuing	TBD
	Army TEC (Area Lim) N	MIPR	June 99	N/A	N/A			1,556	586		2,541
	For Profit Contractor T	TBD	Nov 99	N/A	N/A			575		Continuing	TBD
	Sandia National Labs	MIPR	Oct 99	N/A	N/A				2,034	Continuing	TBD
11.	Project 674478			Page	Page 7 of 12 Pages	zes			Exhib	Exhibit R-3 (PE 0208060F))8060F)

RDT&E PROGRAM ELEMENT/PR	/PROJECT C	COST BREAKDOWN (R-3)	WN (R-3)		DATE F.	February 2000	S S
BUDGET ACTIVITY 07 - Operational System Development		PE NUMBER AND TITLE 0208060F Theater Missile Defenses	er Missile I	Defenses		9	РРОЈЕСТ 674478
(U) Performing Organizations Continued: Support and Management Organizations							
FFRDC	N/A	N/A	2,500	1,353	985	Continuing	TBD
Non-FFRDC (ESC)	N/A	N/A	1,031	875	650	Continuing	TBD
Non-FFRDC (AC2ISRC)	N/A	N/A	540	525	525	Continuing	TBD
Non-FFRDC (AF/XORT)	N/A	N/A	200	955	984	Continuing	TBD
Test and Evaluation Organizations							
C2TIG/AFTED			1,082	2,319	4,165	Continuing	TBD
Culterent		Total Prior	Budget EV 1000	Budget EV 2000	Budget EV 2001	Budget to	Total
Subtotal Product Development		1777	16.391	11.696	12.515	TBD	TBD
Subtotal Support and Management			4,571	3,708	3,144	TBD	TBD
Subtotal Test and Evaluation			1,082	2,319	4,165	TBD	TBD
Total Project			22,044	17,723	19,824	TBD	TBD
Project 674478	Page	Page 8 of 12 Pages			Exhib	Exhibit R-3 (PE 0208060F))8060F)

	RDT&	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	STIFIC/	ATION S	энеет (R-2A E	xhibit)		DATE	Februa	February 2000
8UD(вирсет Астіліту 07 - Operational Sys	обет АСТІVITY - Operational System Development			PE NUMBER AND TITLE 0208060F Theat	RAND TITLE	PE NUMBER AND TITLE 0208060F Theater Missile Defenses	e Defens	es		PROJECT 674479
	COST (\$ ir	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
674479		Attack Operations Concept Development	8,527	8,181	0	0	0	0	0	0	0
9	A. Mission Description Improvements in Attack In addition to the enhand development for TMD o (ATC/R) and moving tal analysis and evaluated the critical to their optimum decisions involving P31	A. Mission Description Improvements in Attack Operations are based on the ability to locate, identify, and destroy theater missiles, their launchers, and associated infrastructure on the ground. In addition to the enhancements to C4I, the Attack Operations Project focuses on advanced sensor and target identification capabilities, CONOPS and requirements development for TMD offensive counter-air and optimized integration with defensive systems. Specific technologies such as automatic target cueing/recognition (ATC/R) and moving target indicator/track (MTI/T) upgrades to Joint STARS, F-15E and potentially the U-2, F-16 and UAVs are to be analyzed using constructive analysis and evaluated through Technology/Operational Concept Demonstrations and CINC Experiments along with command and control connectivity upgrades critical to their optimum employment against theater missile targets. Effectiveness and affordability parameters defined will be used in support of follow on acquisition decisions involving P3I upgrades to existing weapon systems and potential new start programs within existing/other program elements.	ability to loc perations Pr nized integra pgrades to J nal Concept I missile targe systems and	ate, identify ject focuses ution with de oint STARS Demonstrati ts. Effectivy potential ne	, and destroy s on advance efensive syst syst syst some and CIN eness and affew start program systert programs.	/ theater mis desensor an ems. Speci l potentially IC Experime fordability prams within	ssiles, their lad target iden fic technolog the U-2, F-1 ents along warameters de existing/oth	aunchers, ar tification ca gies such as 16 and UAV ith comman effined will the re program	id associated pabilities, C automatic ta s are to be a d and contro e used in su elements.	l infrastructu ONOPS and urget cueing/i malyzed usin of connectivit pport of follo	
333	EY 1999 (\$ in Thousands) \$2,135 Cor \$1,520 Cor	nds) Conducted Attack Operations Operational Concept Demonstration. Continued analysis of updated architectures with weapon system and BMC4I upgrades, to support future year mission analysis. Planned participation in future year distributed simulations to demonstrate improvements in attack operations capabilities.	Operational (architectures	Concept Der s with weapo	monstration. on system ar	id BMC4I u	pgrades, to s	support futus	e year missi pabilities.	ion analysis.	Planned
99	\$2,691 \$2,181	Conducted demonstration of F-15E ATC/R prototype with sensor fusion. Conducted demonstration of F-15E ATC/R prototype with sensor fusion. Conducted development of common ATR for integration in the Time-Critical Targeting Aid (TCTA) for multi-sensor application. Continued development and demonstration planning of ATR onboard the JSTARS test aircraft (T3).	-15E ATC/R nmon ATR 1 n planning o	prototype v for integration f ATR onbo	vith sensor fi on in the Tin oard the JST	usion. ne-Critical T ARS test air	largeting Aic craft (T3).	d (TCTA) fe	r multi-sens	sor applicatic	n. Continued
3	\$8,527	Total									
333	EX 2000 (\$ in Thousands) \$2,145 Cor \$1,900 Cor	unds) Conduct Attack Operations Operational Concept Demonstration. Continue analysis of architectures with weapon system and BMC4I upgrades. Participate in a distributed simulation to verify improvements in attack operations capabilities from sensor to shooter that were demonstrated on prototype attack and surveillance systems. Support development	erational Co rres with wear rom sensor to	ncept Demc ipon system o shooter tha	onstration. and BMC4I at were demo	upgrades. Fonstrated on	Participate in prototype at	ı a distribute ttack and su	d simulation rveillance sy	to verify im	provements in oort development
555	\$2,090 \$2,046 \$8,181	of user's operational requirements for weapon system ORDs. Conduct demonstration of prototype TCTA with ATR. Conduct demonstration of JSTARS ATR with expanded target set of time-critical targets. Conduct development of F-15E ATC/R prototype with on- and off-board sensor fusion. Perform lab demonstration of prototyped capabilities. Total	nts for weap otype TCTA 3 ATC/R pro	on system C with ATR.	ORDs. Conduct der on- and off-	nonstration board senso	of JSTARS r fusion. Per	ATR with e form lab de	xpanded targ monstration	get set of tim of prototype	its for weapon system ORDs. type TCTA with ATR. Conduct demonstration of JSTARS ATR with expanded target set of time-critical targets. ATC/R prototype with on- and off-board sensor fusion. Perform lab demonstration of prototyped capabilities.
ū	Project 674479			Page	Page 9 of 12 Pages	Ş			Ë	thibit R-2A (Exhibit R-2A (PE 0208060F)
					1231						

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	M JUSTIFI	CATION	SHEET (F	R-2A Exh	ibit)	DATE	TE February 2000	2000
800 07.	вирсет астилту 07 - Operational System Development	ıt		PE NUMBER AND TITLE 0208060F Theat	PE NUMBER AND TITLE 0208060F Theater Missile Defenses	Missile De	fenses		PROJECT 674479
(D)	A. Mission Description Continued								
999	EY 2001 (\$ in Thousands) \$0 FY01 Attack Operations programs included in BPAC 674479.	nns programs incl	luded in BPAC	3 674479.					
3	B. Project Change Summary FY01 fundingconsolidated in BPAC 674478								
9	C. Other Program Funding Summary (\$ in Thousands) FY 1999 FY 2000	Thousands) EY 2000	EY 2001	FY 2002	FY 2003	EY 2004	EY 2005	Cost to	Total Cost
99	AF RDT&E Other APPN	Estilliate	cstilliate	Esumate	Estimate	csumate	Esumare	Somplere	
9	D. Acquisition Strategy HQ Aeronautical Systems Center (ASC) provides the program management for the concept exploration and prototype development of TMD Attack Operations. ASC conducts lab demonstrations with Wright Labs and supports Concept of Operations (CONOPS) development and requirements definition by analyzing and demonstrating measures of effectiveness for various sensor improvements and cueing schemes.	vides the prograr s and supports Conprovements and	n management oncept of Oper I cueing schem	t for the concep rations (CONO)	t exploration a PS) developme	nd prototype c	levelopment of ments definitio	TMD Attack Oper n by analyzing and	ations. ASC demonstrating
3	E. Schedule Profile						,		
99	ATC/R Demos (F-15E/Surveillance) Ops Concept Demonstrations * - Completed X - Planned Start Date		1	FY 1999 2 3 * *	4	EY 2000 1 2 3 X X	3 4	FY 2001 1 2 3	3 4
Δ.	Project 674479		Page	Page 10 of 12 Pages		·		Exhibit R-2A (PE 0208060F)	. 0208060F)
				1232					

	RDT&E PROGRAM ELEMENT	RAM ELE	MENT/PF	/PROJECT COST BREAKDOWN (R-3)	OST BRE	AKDOV	VN (R-3)		DATE Fel	February 2000	0
20	BUDGET ACTIVITY 07 - Operational System Development	Jevelopme	nt		PE NUMBER AND TITLE 0208060F Theat	AND TITLE F Theater	ютис Theater Missile Defenses)efenses		. 9	РРОЈЕСТ 674479
(£)	A. Project Cost Breakdown (\$ in Thousands)	(\$ in Thousand	(\$1				FV 1	000	2000 XE		EV 2001
9	Joint STARS ATC/R Demonstration/Improvements	stration/Improve	ements				2,181	2,181	2,046	-	0 0
(E)	_	tration (RS99 a	nd EFX99)				, 2 , 1	2,135	2,145		0 0
999	F-15E ATC/R Demonstrations Total	Ops Demonsus	ations/Sims				, 2, 1, 2, 4, 5, 5, 4, 5, 6, 4, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6,	1,320 2,691 8,527	2,900 2,090 8,181		000
9	B. Budget Acquisition History and Planning Information (S in Thousands)	ry and Plannin	g Information	(\$ in Thousand	ଜ						
9	Performing Organizations:										
	Contractor or	Contract									
	Government Performing	Method/Type or Funding	<u>Award or</u> Obligation	Performing Activity	Project Office 1	Fotal Prior	Budget	Budget	Budget	Budget to	Total
	Activity	Vehicle	Date	EAC	EAC to	to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
	Product Development Organizations For Profit Contractor	zations TBD	Nov 00	V/N	N/A		1 240	1 600			2 840
	(Analyses)		// LON	1177	4774		2,4	000,1			2,010
	Sandia National Labs	MIPR	Oct 99	N/A	N/A		2,310	2,090			4,400
	Raytheon (F-15E Radar)	CPFF	Mar 95	N/A	N/A		2,265	1,564			3,829
	Lockheed (Tgt Pod)	CPFF	Nov 99	N/A	N/A		1,316	891			2,207
	Support and Management Organizations	anizations		,	;						
	FFRDC			N/A	N/A					Continuing	TBD
	Non-FFRDC			Υ/Χ Υ/Χ	V/A		300	355		Continuing	TBD
	Test and Evaluation Organizations	ions		V/N	C/N		000	CCC		Communing	OG I
	C2ITG/AFTED	MIPR	Mar 95	N/A	N/A		734	1,581	Ŭ	Continuing	TBD
	AFSAA	MIPR	Feb 95	N/A	N/A					0	0
	Eglin-46 Tst Wg	PO	May 94	N/A	N/A		362	100		Continuing	TBD
	Project 674479			Page	Page 11 of 12 Pages	S			Exhibit	Exhibit R-3 (PE 0208060F)	8060F)

RDT&E PROGRAM ELEMENT/PROJECT	COST BREAKDOWN (R-3)	/N (R-3)		DATE Fe l	February 2000	
BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0208060F Theater Missile Defenses	Missile D	efenses		PR 67	PROJECT 674479
Subtotals Subtotals Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to EY 1999	Budget Budget 7,131 300 1,096 8,527	Budget EY 2000 6,145 355 1,681 8,181	Budget FY 2001	Budget to Complete TBD TBD TBD	Total Program 13,276 TBD TBD TBD
Project 674479	Page 12 of 12 Pages			Exhibit	Exhibit R-3 (PE 0208060F)	3060F)

		RDT&E BUDGET ITEM JU		ATION	STIFICATION SHEET (R-2 Exhibit)	(R-2 Ex	chibit)		DATE	Februa	February 2000
8UE 07	вирсет Астіvіту 07 - Operatic	вирсет астилту 07 - Operational System Development			PE NUMBER 0302015I CENTER	PE NUMBER AND TITLE 0302015F E-4B CENTER	PE NUMBER AND TITLE 0302015F E-4B NATIONAL AIRBORNE OPERATIONS CENTER	IL AIRBO	ORNE OF	ERATIO	PROJECT NS 674777
		COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
674777		E-4B Aircraft Modernization	1,824	12,597	34,410	32,314	4,168	19,353	27,904	0	132,570
	Quan	Quantity of RDT&E Articles	0	0	0	-	0	0	0	0	-
9		A. Mission Description This program encompasses modernization of National Airborne Operational Center (NAOC) essential infrastructure, mission equipment, and interior, as well as mandated Global Access, Navigation, and Safety/Global Air Traffic Management (GANS/GATM) modifications to the E-4B aircraft. The NAOC supports the National Command Authority (NCA) and Joint Chiefs of Staff with a worldwide, survivable and enduring node of the National Military Command System (NMCS) for the exercise of their national security responsibilities throughout the full spectrum of conflict. These modifications are vital in order to maintain mission effectiveness and efficiency. The upgrades: 1) replace the increasingly hard-to-support 1960s era communications and computer equipment (telecommunications switch, multiplexer, messaging systems, etc) on the aircraft with modern, reliable, digital systems that will be supportable for the planned life of the platform; 2) make the commander's console and battle staff workstations compatible with GCCS architecture and software; 3) provide sound dampening to eliminate the severe ambient noise problems that prevent normal communications in the briefing room, conference room, and battle staff area without using intercom headsets; and 4) provide GANS/GATM equipment, integration and testing.	Airborne O aal Air Traff with a worlc ughout the fi hard-to-sup eliable, digit GCCS archi conference i	perational (ic Manager livide, surviull spectrum port 1960s (all systems tecture and room, and b	Center (NAC ment (GANS ivable and er n of conflict. era commun that will be software; 3) sattle staff ar	DC) essential N/GATM) manduring node These modications and supportable provide sou ea without u	Airborne Operational Center (NAOC) essential infrastructure, mission equipment, and interior, as well as all Air Traffic Management (GANS/GATM) modifications to the E-4B aircraft. The NAOC supports the Na with a worldwide, survivable and enduring node of the National Military Command System (NMCS) for the ughout the full spectrum of conflict. These modifications are vital in order to maintain mission effectiveness hard-to-support 1960s era communications and computer equipment (telecommunications switch, multiplex; eliable, digital systems that will be supportable for the planned life of the platform; 2) make the commander's GCCS architecture and software; 3) provide sound dampening to eliminate the severe ambient noise problem conference room, and battle staff area without using intercom headsets; and 4) provide GANS/GATM equip	re, mission to the E-4B and Military e vital in orc puipment (te ed life of th ig to eliminan headsets;	equipment, if aircraft. The v Command ler to mainta lecommunic e platform; if ate the sever and 4) provi	and interior, and interior, and System (NIV in mission e actions switch 2) make the c ambient no ide GANS/G	Airborne Operational Center (NAOC) essential infrastructure, mission equipment, and interior, as well as bal Air Traffic Management (GANS/GATM) modifications to the E-4B aircraft. The NAOC supports the National with a worldwide, survivable and enduring node of the National Military Command System (NMCS) for the aghout the full spectrum of conflict. These modifications are vital in order to maintain mission effectiveness and hard-to-support 1960s era communications and computer equipment (telecommunications switch, multiplexer, eliable, digital systems that will be supportable for the planned life of the platform; 2) make the commander's GCCS architecture and software; 3) provide sound dampening to eliminate the severe ambient noise problems that conference room, and battle staff area without using intercom headsets; and 4) provide GANS/GATM equipment,
99999		 EY 1999 (\$\mathbb{s}\$ in Thousands) \$1,334	, E4B modification and im Management Support	fication and nent Suppor	E-4B modification and GANS/GATM Analysis) m Management Support	.TM Analysi	(s)				
99999		FY 2000 (\$ in Thousands) \$6,727 Development of E-4B Modifications \$4,670 Software Development; GCCS Integration \$1,200 System Engineering and Program Management Support Total	tions Integration ım Managen	nent Suppoi	t						
, Labor	Project 674777	277	į	Page	Page 1 of 5 Pages	S			Ш	xhibit R-2 (Exhibit R-2 (PE 0302015F)
					1001						

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SHEET (R-2 Exhibi	t)	DATE Febru	February 2000
902 -	вирсет Астилту 07 - Operational System Development	PE NUMBER AND TITLE 0302015F E-4B NATIONAL AIRBORNE OPERATIONS CENTER	ONAL AIRB(ORNE OPERATI	PROJECT ONS 674777
3	A. Mission Description Continued				
9999	FY 2001 (\$ in Thousands) \$3,094 Complete E-4B Modifications Development (Software and Hardware) \$14,594 Purchase Engineering Prototype \$10,010 Install Prototype on A/C #1	and Hardware)			
999	\$5,162 System Integration, Testing, and Documentation \$1,550 System Engineering, and Program Management Support \$34,410 Total	ţ			
<u> </u>	B. Budget Activity Justification This program is in budget activity 7 - Operational System Development, Research Category 6.6 because the program is developing modifications for current operations systems.	earch Category 6.6 because the	program is devel	oping modifications fo	or current operations
9	C. Program Change Summary (\$ in Thousands)				,
45	Partitions Table 12 - Joseph 200 1000	FY 1999	FY 2000	FY 2001	Total Cost
3	rievious riesidelits Budget (r.1. 2000 r.Br.) Appropriated Value	2,137	12,666	40,510	061,10
3	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	9- 6			
	c. Omnibus or Other Above Threshold Reprogram		69-		
	d. Below I hreshold Keprogram e. Rescissions	-243			
99	 T. Otner Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR 	1,824	12,597	-6,106 34,410	132,570
<u>(</u>	Significant Program Changes: FY01: RDT&E and Procurement programs have been re-phased based on DepSecDef guidance.	pSecDef guidance.			_
۵	Project 674777	Page 2 of 5 Pages		Exhibit R-:	Exhibit R-2 (PE 0302015F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SET ITEN	A JUSTIF	ICATION	SHEET (R-2 Exhi	bit)	/ <u>a</u>	DATE February 2000	5000
й О	вирбет Астииту 07 - Operational System Development	elopment			PE NUMBER AND TITLE 0302015F E-4B CENTER	AND TITLE F. E-4B NA	TIONAL A	IRBORNE	PE NUMBER AND TITLE 0302015F E-4B NATIONAL AIRBORNE OPERATIONS CENTER	PROJECT 674777
9	D. Other Program Funding Sumi	mary (\$ in Th FY 1999	housands) FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to	Total Cost
9		Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
<u> </u>	Other APPN Aircraft Procurement AF, Budget Activity 5, Weapon System Code E00400, PE 0302015F	10,971	15,044	31,559	16,925	33,023	61,349	38,780	0	207,651
9	There are two contracts on the E-4B: an Engineering Services (ES) contract and a Contractor Logistics Support (CLS)/Modifications contract. The ES contract was awarded to the Boeing Company as the Original Equipment Manufacturer (also includes support for the KC-10, VC-25, T-43, and others) and provides development and prototyping efforts. The CLS/Mods contract was awarded after a full and open competition and provides Programmed Depot Maintenance and modification installations.	B: an Enginee s the Original is contract was	ring Services (Equipment M: s awarded afte:	(ES) contract s anufacturer (al r a full and ope	nd a Contracto so includes sur en competition	r Logistics Support for the Kand provides I	pport (CLS)/M C-10, VC-25, ' Programmed D	odifications or T-43, and othe Pepot Maintena	ontract. The ES cont ars) and provides dev ance and modification	ract was elopment and n
	The E-4B Modernization Program will be developed and trial installed under the ES contract as a Cost Plus Award Fee (CPAF) effort. The production and installation of modification kits will be performed under the CLS/Mods contract as a Firm Fixed Price (FFP) contract.	will be develo	ped and trial i S/Mods contr	nstalled under act as a Firm F	the ES contrac	t as a Cost Plu P) contract.	s Award Fee (CPAF) effort.	The production and	installation of
9) E. Schedule Profile			П	FY 1999 2 3	4	FY 2000 1 2 3	000 3 4	EY 2001	01 3 4
999	 Begin Engineering Trade Studies Complete Engineering Trade Studies Beein E-4B Modifications Development 	es ment			*		*			,
<u> </u>		elopment					(×		×
<u> </u>		r A/C #1 X Denotes	Planned Even	#					×	
	Project 674777			Pag	Page 3 of 5 Pages				Exhibit R-2 (PE 0302015F)	0302015F)
					1227					

	RDT&E PROGRAM ELEMENT		/PROJECT C	OST BF	COST BREAKDOWN (R-3)	VN (R-3)		DATE Fe	February 2000	00
800 07	вирсет Астилту 07 - Operational System Development	ment		PE NUMBER AT 0302015F CENTER		ID TITLE E-4B NATIONAL AIRBORNE OPERATIONS	AIRBORI	NE OPER.		PROJECT 674777
(n)	A. Project Cost Breakdown (\$ in Thousands)	(sands)				FV 1999	000	FY 2000	Q	FY 2001
(1)	Engineering Trade Studies						1.334	17 7 7 7	a	17077
999		!				î		6,727	7	3,094
999		.						ŕ		14,594
3333		gement Support				, <u>m</u>	490 1,824	1,200 12,597	0	5,162 1,550 34,410
3	B. Budget Acquisition History and Planning Information (\$ in Thousands)	nning Informatio	n (\$ in Thousand	(§)						
3	Performing Organizations:									
	Contractor or Contract Government Method/Type	ype Award or	Performing	Project						
	Performing or Funding	2 Obligation	Activity	Office	Total Prior	Budget FV 1000	Budget FV 2000	Budget FV 2001	Budget to	Total
	Development Organiz	ATB/T		1	7771 1 1 777	777	70007	1007	A CALLED TO THE PARTY OF THE PA	110gram
	Boeing CPAF	Feb 97	TBD	TBD	0	1,334	11,397	32,820	80,569	126,120
	and Management Org	00	A11.4	A1/A	c	010	0,00	240	000	1 104
	ANSER I & M	Jan <i>99</i> Oct 98	K/X	K N	0	318 160	330 825	1.160	2.320	1,704
		Various	TBD	TBD	0	12	37	, 42	, 50	141
	valuation Organizat									
	NSA/FAA MIPR	N/A	TBD	TBD	0			40	100	140
	Project 674777		Pag	Page 4 of 5 Pages	sei			Exhib	Exhibit R-3 (PE 0302015F)	02015F)

RDT&E PROGRAM ELEMENT/PROJECT (COST BREAKDOWN (R-3)	WN (R-3)		DATE Fe	February 2000	00
вирсет Астіvітү 07 - Operational System Development	PE NUMBER AND TITLE 0302015F E-4B N CENTER	ID TITLE E-4B NATIONAL AIRBORNE OPERATIONS	AIRBORN	IE OPER	ATIONS 6	РRОЈЕСТ 674777
Contract Contract Method/Type Award or Item or Funding Obligation Delivery Description Vehicle Date Date Support and Management Property None Test and Evaluation Property None Subtotal Support and Management Subtotal Subtotal Support and Evaluation Total Project Total Project	Total Prior to FY 1999 Total Prior to FY 1999 0 0 0	Budget FY 1999 1,334 490 1,824	Budget EY 2000 11,397 1,200 12,597	Budget EY 2001 32,820 1,550 34,410	Budget to Complete Rowselete 80,569 3,070 100 83,739	Total Program 126,120 6,310 132,570
Project 674777	Page 5 of 5 Pages			Exhibi	Exhibit R-3 (PE 0302015F)	(2015F)

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	RDT	RDT&F RIIDGET ITEM II		NOITA	STIFICATION SHEET (R-2 Exhibit)	(R.2 E.	hihit		DATE	ı	0000
2							(1)		_	Lenina	rebidary 2000
800c 07 -	BUDGET ACTIVITY 07 - Operational Sy	BUDGET ACTIVITY 07 - Operational System Development			PE NUMBER AN 0303110F	PE NUMBER AND TITLE 0303110F Defen	se Satell	lite Com	municati	AD TITLE Defense Satellite Communications System	PROJECT em 672638
	COST (\$	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
672638		Defense Satellite Communications Sys	10,405	5,015	7,328	4,069	2,153	1,259	1,352	0	626,915
	Quantity of RDT&E Articles	E Articles	0	0	0	0	0	0	0	0	0
9	A. Mission Description Defense Satellite Comm transmissions in the Sup management, intelligenc DSCS support the Nation Agency, Air Force Satell	A. Mission Description Defense Satellite Communications System (DSCS) is the backbone of the Government's satellite communications system, providing both secure voice and high data rate transmissions in the Super High Frequency band. DSCS provides unique and vital national security communications for global command and control, crisis management, intelligence and early warning data relay, treaty monitoring and surveillance information, and diplomatic traffic. The communications relayed through DSCS support the National Command Authorities, Defense Information System Network, Diplomatic Telecommunications Service, White House Communications Agency, Air Force Satellite Control Network, and ground mobile forces of all services.	s the backbor SCS provides ty, treaty mo efense Inforn	ne of the Go s unique and nitoring and mation Syst forces of al	wernment's s I vital nation I surveillanc em Network I services.	satellite com al security c e informatioi , Diplomatic	munications ommunicati n, and diplor	system, pro ons for glob natic traffic inications S	viding both al command . The comm ervice, Whit	secure voice and control, unications re e House Con	and high data rate crisis slayed through nmunications
	The DSCS Service I 200%, and impleme	The DSCS Service Life Enhancement Program (SLEP) includes add 200%, and implements the DoD Space Architect's recommendation	P) includes a	ıdditional m ən.	odifications	that increase	the last fou	ır satellites c	apacity to ta	ctical users l	includes additional modifications that increase the last four satellites capacity to tactical users by more than mmendation.
	The last two DSCS III satellites vadditional launch loads analyses.	The last two DSCS III satellites will launch on the Evolved Expendable Launch Vehicle (EELV) and will require DSCS launch vehicle interface modifications and additional launch loads analyses.	olved Exper	ıdable Laun	ıch Vehicle (EELV) and	will require	DSCS launc	ch vehicle in	terface modi	fications and
99	FY 1999 (\$ in Thousands) \$1,317 Sys	sands) System Program Office Operations - Contractor Support	tions								
9	\$1,592	 Mission Support Basic DSCS Program Pay performance incentives for development satellites still on orbit and operational 	for developn	nent satellit	es still on orl	bit and opera	ıtional				
<u> </u>	\$7,316 \$180 \$10,405	 Conduct programmatic tradeoffs and analyses Continue DSCS/EELV (Evolved Expendable Launch Vehicle) integration kit development, transitioning the last two satellites to EELV Continue SLEP (Service Life Enhancement Program) Modification Total 	ooffs and ana ed Expendak Enhancemen	lyses ole Launch t Program)	Vehicle) inte Modificatior	gration kit d 1	evelopment,	, transitionir	ig the last tw	o satellites t	o EELV
<u>م</u>	Project 672638			Page	Page 1 of 6 Pages	S				Exhibit R-2	Exhibit R-2 (PE 0303110F)

	RDT&E	RDT&E BUDGET ITEM JUSTIFICATION	STIFICATION SHEET (R-2 Exhibit)	t)	DATE February 2000	0
BUDG 07 -	вирдет астилту 07 - Operational System Development	m Development	PE NUMBER AND TITLE 0303110F Defense Satellite Communications System	atellite Commur		РRОЈЕСТ 672638
<u>G</u>	A. Mission Description Continued	Continued				
99	FY 2000 (\$ in Thousands) \$1,210 Sys	ds) System Program Office Operations - Contractor Support				
<u>(</u>	- N \$553 Ba	- Mission Support Basic DSCS Program - Pay performance incentives for development satellites still on orbit and operational	tes still on orbit and operational			
999	\$100 Fin \$3,152 Co \$5,015 To	 Conduct programmanc tradeous and analyses Finish SLEP Modification Continue DSCS/EELV integration kit development, tra Total 	ins and analyses on kit development, transitioning the last two satellites to EELV	s to EELV		
99	FY 2001 (\$ in Thousands) \$1,653 Sys	ids) System Program Office Operations - Contractor Support				, t 100
<u>(</u>	- N \$315 Ba	 Mission Support Basic DSCS Program Pay performance incentives for development satellites still on orbit and operational 	tes still on orbit and operational			
33	\$5,360 Co \$7,328 To	 Conduct programmatic tradeoits and analyses Continue DSCS/EELV integration kit development, transitioning the last two satellites to EELV Total 	cansitioning the last two satellite	s to EELV		
9	B. Budget Activity Justification This program is in Budget Activity 7, C launch, and associated support systems.	B. Budget Activity Justification This program is in Budget Activity 7, Operational System Development, since DSCS is a fully operational satellite constellation with replenishment satellites awaiting launch, and associated support systems.	ce DSCS is a fully operational se	ıtellite constellation w	ith replenishment satellites a	waiting
9	C. Program Change Sui	C. Program Change Summary (\$ in Thousands)	FY 1999	FY 2000	FY 2001	Total Cost
999	Previous President's Budget (FY 2000 PBR) Appropriated Value Adjustments to Appropriated Value a. Congressional/General Reductions	get (FY 2000 PBR) ated Value Reductions	14,003 14,141 -138	8,985 5,485 -7		645,948
<u>-</u>	Project 672638	Page	Page 2 of 6 Pages		Exhibit R-2 (PE 0303110F)	3110F)

	RDT&E BUDGET ITEM JU	SET ITE		CATION	STIFICATION SHEET (R-2 Exhibit)	R-2 Exhi	bit)	Δ	DATE February 2000	2000
800 04	вирсет астилту 07 - Operational System Development	elopment			PE NUMBER AND TITLE 0303110F Defer	AND TITLE - Defense	Satellite C	ommunic	וס דודוב Defense Satellite Communications System	PROJECT 672638
9	C. Program Change Summary (\$ in Thousands) Continued	\$ in Thousa	<u>nds) Continue</u>	∵		FY 1999	FY 2000		FY 2001	Total Cost
	b. Small Business Innovative Research	arch				-587				
	c. Omnibus or Other Above Threshold Reprogram	hold Reprogr	ram				-28			
	d. Below Threshold Reprogram					-2,953				
	e. Rescissions f. Other					-58	-435			
99	Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR	e FY 2000 P BR	эвк			10,405	5,015		-1,265 7,328	626,915
9	Significant Program Changes: \$2895K in FY2001 used to fund higher Air Force priorities. RDT&E funding beyond FY04 was transferred to the O&M appropriation for FY05 through the end of the program. B8 launch scheduled for Jul 99 slipped to Jan 00 due to launch scheduling issues and satellite wiring problems.	רY2001 us is transferred pped to Jan C	ed to fund high I to the O&M a 00 due to launci	er Air Force p ppropriation ft h scheduling is	riorities. or FY05 throug	h the end of th	e program. dems.			
9	D. Other Program Funding Sumi	mary (S in]	Chousands)	100 XE	COOC 753	TX 2003	XX 2004	300C XII	7	E
	- - -1	Actual	Estimate	Estimate	FY 2002 Estimate	Estimate	Estimate	Estimate	Complete	Total Cost
9	AF RDT&E									
<u>e</u>	AF Wideband 3600, PE 63854F, BPAC 836780	0	0	11,500	13,300	24,400	46,600	25,900	0	121,700
	(CCS-C)									
3	AF Wideband 3080	0	0	4,852	5,411	5,503	8,115	2,209	0	26,090
	Procurement (CCS-C), PE 33600F									
<u>(</u>	Missile Procurement, Budget Activity 5, Space and Other Support, Line Item P-27	27,573	30,425	22,770	26,841	22,804	11,819	12,091	0	1,590,741
<u>e</u>	E. Acquisition Strategy All satellites have been acquired and four satellites remain to launch. Enhancements to satellites not launched will be accomplished through sole source contract awards.	d four satelli	ites remain to l	aunch. Enhan	cements to sate	í llites not launc	hed will be acc	complished th	rough sole source cc	ontract awards.
-	Project 672638			Pag	Page 3 of 6 Pages				Exhibit R-2 (PE 0303110F)	: 0303110F)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SHEET (R-2	Exhibit)		DATE	February 2000	y 2000	
вирсет астіvіту 07 - Operational System Development	PE NUMBER AND TITLE 0303110F Defen	⊓⊓∟E e fense Sat	мр тите Defense Satellite Communications System	unication	ns Syste	PROJECT m 672638	ст 38
(U) F. Schedule Profile	FY 1999	,	<u>Y 200</u>		EY .	FY 2001	-
(U) Launch DSCS B8/IABS (Integrated Apogee Boost Subsystem) 9 (Jan	s 7	4 -	n v *	4	7	n	4
(U) Launch DSCS B11/IABS 8 (Oct 00) (I) Launch DSCS B6/IABS 7 (May 02)				×			
				×			,
(U) EELV Integration (Sep 98 - May 03) * = completed event; x = planned event							
Project 672638	Page 4 of 6 Pages			Ē	Exhibit R-2 (PE 0303110F)	PE 030311	0F)

	RDT&E PROGRAM ELEMENT	RAM ELE		/PROJECT COST BREAKDOWN (R-3)	SOST BE	REAKDO!	WN (R-3)		DATE Fe	February 2000	8
8UE 07	вирдет астилту 07 - Operational System Development	evelopme	nt		PE NUMBER AN 0303110F	PE NUMBER AND TITLE 0303110F Defens	⊌D TITLE Defense Satellite Communications System	Commur	ications		РRОЈЕСТ 672638
(5)	A. Project Cost Breakdown (\$ in Thousands)	S in Thousand	<u>(S)</u>				FV 1000	600	FY 2000		FV 2001
9	System Program Office Operations	tions]	1,317	1,210	a c	1,653
99	Basic DSCS Program	Zahiolo Intoger					7, ,	1,592	553	~ ·	315
333	Evolved Expendable Launch venicle integration Service Life Enhancement Program Modifications Total	/ enicie integra igram Modifica	uon tions				10,4	7,510 180 10,405	5,132 100 5,015	7 0 10	2,360 0 7,328
3	B. Budget Acquisition History and Planning Information (\$ in Thousands)	y and Plannin	g Informatio	n (\$ in Thousan	ds)						
9	Performing Organizations: Contractor or	Contract	,								
·	Government Performing	Method/Type or Funding	Award or Obligation	Performing Activity	Project Office	Total Prior	Budget	Budget	Budget	Budget to	Total.
	Activity Vehicl	<u>Vehicle</u> ations	Date	EAC	EAC	to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
	Lockheed Martin	CPAF/AF	Oct 84/Mar	437,500	437,500	434,259	180	100		0	434,539
	Miscellaneous	CPAF	96 Various	N/A	N/A	132,773	7,316	3,152	5,450	3,284	151,975
	Support and Management Organizations Aerospace Corp	anizations PO	Varions	N/A	, X	12.900				0	12.900
,		Various	Various	N/A	N/A	15,402	2,909	1,763	1,878	5,549	27,501
	Test and Evaluation Organizations None	suoi									
9	Government Furnished Prop	verty: Contract Method/Type	Award or								
	Item Description Product Development Property None	or Funding Vehicle	Obligation Date	<u>Delivery</u> <u>Date</u>		Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
ᅩ	Project 672638			Pa	Page 5 of 6 Pages	ses			Exhibi	Exhibit R-3 (PE 0303110F)	03110F)

RDT&E PROGRAM ELEMENT/PROJ	I/PROJECT COST BREAKDOWN (R-3)	I (R-3)	DATE F	February 2000	00
вирсет астіуіту 07 - Operational System Development	PENUMBER AND TITLE 0303110F Defense Satellite Communications System	Satellite Com	munications		PROJECT 672638
(U) Government Furnished Property Continued: Support and Management Property None Test and Evaluation Property None				·	
Subtotals Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation	Total Prior I to FY 1999 FN 567,032 28,302	Budget Budget FY 1999 FY 2000 7,496 3,252 2,909 1,763	Et Budget 00 FY 2001 52 5,450 53 1,878	Budget to Complete 3,284 5,549	Total Program 586,514 40,401
Subtorial Test and Evaluation Total Project	595,334	10,405 5,015	1,328	8,833	626,915
Project 672638	Page 6 of 6 Pages		Exhi	Exhibit R-3 (PE 0303110F)	03110F)
	,				

L		RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	USTIFIC	ATION	SHEET	(R-2 Ex	hibit)		DATE	l	February 2000
BUDK 07	GET,	вирсет астіліту 07 - Operational System Development			PE NUMBER AN 0303112F	PE NUMBER AND TITLE 0303112F AIR FO	AD TITLE AIR FORCE COMMUNICATIONS	NOMMC	CATION		PROJECT 674884
		COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
674884	22	Public Key Infrastructure Implementation	0	0	11,478	31,648	0	0	0	0	43,126
		Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0
<u>(3</u>	. ₽	A. Mission Description PUBLIC KEY INFRASTRUCTURE (PKI):									
	A] Ma dig	A Department of Defense (DoD) PKI was mandated by the Deputy Secretary of Defense on 8 Aug 97 and the Services were further directed to use the capabilities in a 6 May 99 memo. PKI, a new start program, supports the overall Defense-in-Depth strategy for information assurance capabilities user identification, non-repudiation, digital signatures and encryption for government electronic business and network transactions protecting/securing all network information.	by the Deputhe overall Detroric busing	ty Secretary efense-in-E ess and netv	of Defense Oepth strategy work transact	on 8 Aug 97 / for informa ions prote	and the Ser ttion assuran cting/securii	vices were f ice capabilit ing all netwo	urther direct es user id rk informati	ted to use the entification, r ion.	capabilities in a 6 10n-repudiation,
	Be	Because of the intial program efforts for integration and implementation of the PKI COTS certificates and products into our common operating environment (including network architecture), FY01 and FY02 funds were transferred from Operations and Maintenance (O&M) to Research Development Test & Evaluation (RDT&E).	and impleme	ntation of tl m Operatio	he PKI COTS ns and Maint	s certificates enance (0&	and product M) to Resea	ts into our carrect	ommon oper	rating enviro & Evaluation	nment (including (RDT&E).
	Furbord Curt the tect act	Funds will be used to support initial implementation and integration of PKI user smart card, public key directory storage of the PKI certificates, PKI registration for both users and servers, and initial training. In particular, the RDT&E funds will be applied to the Smart Card/Common Access Card (CAC) to integrate and test with the current Defense Enrollment Reporting System (DEERS)/Real-Time Automated Personnel Indentification Systems (RAPIDS) ID and registration system. Additionally, the funds will be used to prototype and test replicating the DoD Public key directory to each Air Force base-level directory structure. Furthermore, we will perform technology integration and testing of new hardware CAC token into the user desktop environment. Finally, we alloted a small amount for AF SPO program support activities.	and integrati lar, the RDT RSJ/Real-Tir ig the DoD P CAC token ir	on of PKI u &E funds w ne Automal ublic key di	iser smart car vill be applied ted Personnel irectory to ea desktop envi	d , public ke 1 to the Sma I Indentifical ch Air Force ronment. Fi	y directory rt Card/Com tion Systems base-level of nally, we all	storage of the mon Access s (RAPIDS) directory streed a smallotted a s	ne PKI certil s Card (CAK ID and regi ucture. Furi	ficates, PKI n) to integrate stration syste thermore, we	d integration of PKI user smart card, public key directory storage of the PKI certificates, PKI registration for, the RDT&E funds will be applied to the Smart Card/Common Access Card (CAC) to integrate and test with the syl/Real-Time Automated Personnel Indentification Systems (RAPIDS) ID and registration system. Additionally, the DoD Public key directory to each Air Force base-level directory structure. Furthermore, we will perform C token into the user desktop environment. Finally, we alloted a small amount for AF SPO program support
999	\$ \$ EX	FY 1999 (\$ in Thousands) \$0 No Activity \$0 Total									
999	\$ 8 EX	FY 2000 (\$ in Thousands) \$0 No Activity \$0 Total									
<u> </u>	roje	Project 674884		Page	Page 1 of 4 Pages	ø.			w.	Exhibit R-2 (Exhibit R-2 (PE 0303112F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SHEET (R-2 Exhibit)		DATE February 2000	2000
- 20	вирсет астилту 07 - Operational System Development	PE NUMBER AND TITLE 0303112F AIR FORCE COMMUNICATIONS	OMMUNICA	TIONS	РRОЈЕСТ 674884
9	A. Mission Description Continued				
99	EX 2001 (\$ in Thousands) \$7,085 Prototyping support for Interface/Integration of registration Common Access Card tokens, peripheral readers with Air Force-wide computer and	ation Common Access Card tokens, p	peripheral reade	rs with Air Force-wide cc	emputer and
999	\$3,820 Testing support of Public Key Infrastructure Certificate Directories and other infrastructure components \$7.3 Program and managment control (SPO activities) \$11,478 Total	e Directories and other infrastructure	components		
()	B. Budget Activity Justification This is a budget activity 7, Operational System Development because it supports Air Force requirements to prototype, integrate, and test Public Key Infrastructure components including registration and usage hardware/middle-ware, Common Access Cards, and directories on Air Force computer systems and networks.	orts Air Force requirements to prototy, Common Access Cards, and director	ype, integrate, a ories on Air Forc	nd test Public Key Infrast e computer systems and 1	ructure networks.
3	C. Program Change Summary (\$ in Thousands)	FV 1000	EV 2000	FV 2001	Total Cost
555	Appropriated Value Adjustments to Appropriated Value a. Congressional/General Reductions b. Small Business Innovative Research c. Omnibus or Other Above Threshold Reprogram d. Below Threshold Reprogram		0000	F ¥ 2001	Loral
99	e. Rescissions f. Other Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR			11,478 11,478	43,126
<u> </u>	Significant Program Changes:				
0.	Project 674884	Page 2 of 4 Pages		Exhibit R-2 (PE 0303112F)	0303112F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	1 JUSTIF	ICATION	SHEET	(R-2 Exhi	bit)		DATE February 2000	y 2000
BGD 2	вирсет астилту 07 - Operational System Development			PE NUMBER AND TITLE 0303112F AIR F	AND TITLE F AIR FOF	AIR FORCE COMMUNICATIONS	IUNICATI	SNO	PROJECT 674884
Ð	اغرا	nousands) FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
<u> </u>	AF RDT&E APPN 3600/PE 33112F/PE Title AF Communications/BPAC 674884/ Title PKI		11,478	31,648					43,126
9 9	Other APPN E. Acquisition Strategy Electronic Systems Center (ESC) Information Assurance Product Area Directorate (PAD) manages the AF PKI Program. All major contracts within this program element are scheduled to be awarded after full and open competition or through existing government contracting vehicles. The PKI program is a new start and we will continue to address contract options. The options under review include: GSA, Standard AF contract (through the Standard Systems Group, AL), and Information Technology Services Program (ITSP) to support engineering effort and equipment for the integration of Common Access Card tokens and prototyping of AF base level directories. Current PKI program strategy is to use the ITSP contract.	ssurance Produce of open compers is under review engineering elements of the ITSP or the I	e Product Area Direct competition or throug r review include: GS ering effort and equip	torate (PAD) 1 gh existing go 'A, Standard 4 ment for the ii	nanages the Avernment cont VF contract (thuse	F PKI Program racting vehicles rough the Stanc 'ommon Access	. All major or The PKJ pard Systems ard token	e Product Area Directorate (PAD) manages the AF PKI Program. All major contracts within this program competition or through existing government contracting vehicles. The PKI program is a new start and we will review include: GSA, Standard AF contract (through the Standard Systems Group, AL), and Information ering effort and equipment for the integration of Common Access Card tokens and prototyping of AF base leve	is program art and we will Information of AF base level
<u>G</u>			-	FY 1999	4	EX 2000	000 3 4	-	EY 2001
99	Prototyping support for PKI Interface/Integration of Tokens Testing support of Public Key Infrastructure Certificate Directories X denotes planned event	n of Tokens tificate Direct	ories	1	-			· × ×	
	Project 674884		Pag	Page 3 of 4 Pages				Exhibit R-2 (F	Exhibit R-2 (PE 0303112F)
				1249					

	RDT&E PROGRAM ELEMENT		/PROJECT CO	ST BF	COST BREAKDOWN (R-3)	VN (R-3)		DATE Fe	February 2000	00
BUD 07	BUDGET ACTIVITY 17 - Operational System Development	ənt		PE NUMBER AI 0303112F		ID TITLE AIR FORCE COMMUNICATIONS	MUNICA	FIONS	9	РРОЈЕСТ 674884
(n)	A. Project Cost Breakdown (\$ in Thousands)	(spu				FY 1999	666	FY 2000	Q	FY 2001
3	Prototyping support for Interface/Integration of registration Common Access Card tokens,	n of registration Con	nmon Access C	ard token	's]	1		1	7,085
555	peripheral readers with Air Force-wide computed and communication architectures. Testing support of PKI Certificate Directories and other infrastructure components. Program and managment control (SPO activities) Total	purer and commum es and other infrastr ities)	cation arcintecti	ents						3,820 573 11,478
3	B. Budget Acquisition History and Planning Information (\$ in Thousands)	ing Information (\$	in Thousands)							
9	Performing Organizations: Contractor or									
	Government Method/Type Performing or Funding	Award or Obligation	Performing Activity	Project Office	Total Prior	Budget	Budget	Budget	Budget to	Total
	Activity Product Develonment Organizations	<u>Date</u>	EAC	EAC	to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
	Prototyping Support PR	Dec 00	TBD	TBD				7,085	19,500	26,585
	Support and Management Organizations ESC/DIW SPO Activities PR	Dec 00	TBD	TBD				573	1,600	2,173
	luation Organizat	,	!	!	ţ	•	c	6		
	Test Support PR	Dec 00	TBD	TBD	0 Total Prior	0 Budget	0 Budget	3,820 Budget	10,548 Budget to	14,368 Total
	Subtotals				to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
	Subtotal Product Development							7,085	19,500	26,585
	Subtotal Support and Management Subtotal Test and Evaluation				0	0	0	3,820	10,548	14,368
	Total Project				0	0	0	11,478	31,648	43,126
1.1.	Project 674884		Page 4	Page 4 of 4 Pages	es		i	Exhibi	Exhibit R-3 (PE 0303112F))3112F)

PE NUMBER: 0303131F
PE TITLE: Minimum Essential Emergency Communications Network (MEECN)

	RDT&E BUDGET ITEM JU	JSTIFICATIO	ATION	JSTIFICATION SHEET (R-2 Exhibit)	(R-2 Ex	hibit)		DATE	Februa	February 2000
BUDG 07 -	вирдет АСТІVITY 07 - Operational System Development			PE NUMBER AND TITLE 0303131F Minin Communication	PE NUMBER AND TITLE 0303131F Minimum Essential Emergency Communications Network (MEECN)	um Esse Networl	ential Em k (MEEC	ergency N)		
	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	37,624	45,285	15,302	2,970	2,437	2,032	2,075	Continuing	TBD
672832	32 VLF/LF System Improvements	22,260	21,809	2,719	1,446	1,176	1,452	1,495	Continuing	TBD
674521	21 DIRECT	3,321	1,171	1,236	1,135	873	290	290	Continuing	TBD
674610	10 MEECN EHF	12,043	22,305	11,347	389	388	290	290	Continuing	TBD
	Quantity of RDT&E Articles	6	11	4	0	0	0	0	0	TBD
ව	A. Mission Description MEECN systems provide assured communications connectivity between the National Command Authorities (NCA) and the strategic deterrent forces. Currently these systems include the Modified Miniature Receive Terminal (MMRT) with High Data Rate (HIDAR) mode for the E-4B and E-6B aircraft, a VLF/LF modification to the Minuteman Launch Control Center (LCC), the Defense Improved Emergency Message Automated Transmission System (IEMATS) Replacement Command and Control Terminals (DIRECT), and Extremely High Frequency (EHF) modification to the Minuteman LCC.	onnectivity b minal (MMR ise Improved Frequency (E	etween the] (T) with Hig I Emergency EHF) modifi	National Cor th Data Rate Message A cation to the	nmand Auth (HIDAR) m utomated Tr Minuteman	orities (NC/lode for the lansmission Succession Success	A) and the st E-4B and E- System (IEN	rategic dete 6B aircraft, 1ATS) Repl	a VLF/LF macement Cor	Currently these nodification to the nmand and
9	B. Budget Activity Justification This program is in Budget Activity 7 - Operational System Development, because it supports work on currently operating systems.	ystem Devel	opment, bec	ause it supp	orts work on	currently of	oerating syst	ems.		
9	C. Program Change Summary (\$\sumstreet\) in Thousands)				FY 1999		FY 2000	FY 2001	10	Total Cost
55	Previous President's Budget (FY 2000 PBR) Appropriated Value				38,788 39,230		45,907 45,907	15,438	I∞	
9	Adjustments to Appropriated Value a. Congressional/General Reductions				442		-15			
	b. Small Business Innovative Research c. Omnibus or Other Above Threshold Reprogram				-1,232		-249			
.	d. Below I hreshold Keprogram				0/7					

Page 1 of 15 Pages

Exhibit R-2 (PE 0303131F)

	RDT&E BUDGET ITEM JUSTIFICATION	STIFICATION SHEET (R-2 Exhibit)	()	DATE February 2000	000
2 6	вирсет астилту 07 - Operational System Development	PE NUMBER AND TITLE 0303131F Minimum Essential Emergency Communications Network (MEECN)	ssential Eme	rgency)	
9	C. Program Change Summary (\$ in Thousands) Continued	FY 1999	FY 2000	FY 2001	Total Cost
55	e. Rescissions f. Other Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR	-210	-358 45,285	-136 15,302	TBD
9	Significant Program Changes: BTR in FY99: Support to DIRECT: +\$800K; support to other AF priorities: -\$512K.	\$512K.			
	Page	Page 2 of 15 Pages		Exhibit R-2 (PE 0303131F)	303131F)

	RDT&E BUDGET ITEM JU	JSTIFIC,	ATION 8	STIFICATION SHEET (R-2A Exhibit)	R-2A E	xhibit)		DATE	Februa	February 2000
8006 07 -	вирсет астіvіту 07 - Operational System Development			РЕ NUMBER 0303131 Сотти	PE NUMBER AND TITLE 0303131F Minim Communication	PE NUMBER AND TITLE 0303131F Minimum Essential Emergency Communications Network (MEECN)	ential Em k (MEEC	ergency N)		PROJECT 672832
	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
672832	2 VLF/LF System Improvements	22,260	21,809	2,719	1,446	1,176	1,452	1,495	Continuing	TBD
<u> </u>	A. Mission Description The Modified Miniature Receive Terminal (MMRT) Program will modify existing Miniature Receive Terminals (MRTs) and provide High Data Rate (HIDAR) capability for installation on the following platforms as a minimum: the E-4B, National Airborne Operations Center (NAOC); and the E-6B, Take Charge and Move Out (TACAMO). This program will make VLF/LF receivers fully interoperable. MRT is a Very Low Frequency/Low Frequency (VLF/LF) receiver without HIDAR already designed, developed, and installed on the B-1B and B-52H bombers. The MRTs to be modified for the MMRT program will be removed from the B-1Bs and some retired B-52s. HIDAR is a Joint Staff-directed effort to provide a fast and interoperable MEECN mode. The MMRT program develops and tests HIDAR modifications required to ensure the E-4 and E-6 platforms are interoperable in MEECN.	Program wis as a minimu receivers full-1B and B-52 deffort to proafforms are in	Il modify ex m: the E-4F y interopera H bombers. vide a fast a teroperable	isting Miniat 3, National A hble. MRT is The MRTs in	ure Receive virborne Op s a Very Lov to be modifi able MEEC	Program will modify existing Miniature Receive Terminals (MRTs) and provide High Data Rate (HIDAR) as a minimum: the E-4B, National Airborne Operations Center (NAOC); and the E-6B, Take Charge and Peceivers fully interoperable. MRT is a Very Low Frequency/Low Frequency (VLF/LF) receiver without H B and B-52H bombers. The MRTs to be modified for the MMRT program will be removed from the B-1E effort to provide a fast and interoperable MEECN mode. The MMRT program develops and tests HIDAR forms are interoperable in MEECN.	MRTs) and ter (NAOC) /Low Frequ MRT progri e MMRT pr	provide Hig ; and the E-C ency (VLF/I am will be re ogram devel	h Data Rate B. Take Ch F) receiver removed from tops and test	(HIDAR) arge and Move without HIDAR the B-1Bs and s HIDAR
	ICBM Launch Control Center (LCC) VLF/LF RDT&E and Production tasks were contractually combined with the MEECN EHF effort. The combined preferred to as the Minuteman MEECN Program (MMP). The ICBM Prime Integrating Contract (through OO-ALC) is being used as a contracting vehicle. Requirements, estimates and schedules remain the same.	&E and Prod MP). The ICI ame.	uction tasks 3M Prime In	were contrac	stually comb ontract (thro	bined with thangh OO-ALO	e MEECN F C) is being u	3HF effort. ' ised as a con	The combine tracting veh	E and Production tasks were contractually combined with the MEECN EHF effort. The combined program is P. The ICBM Prime Integrating Contract (through OO-ALC) is being used as a contracting vehicle. me.
999999	\$8,730 Continued common MMRT and airborne integration development \$3,100 MMRT Testing Communications Evaluation Program (CEP)/Studies and Analysis \$9,060 ICBM LCCs VLF/LF integration and development (part of MMP) \$22,260 Total	and airborne Program (CE ation and dev	ntegration d P)/Studies a	levelopment ind Analysis art of MMP)						
555555	\$\$5,000 (\$\subseteq\$ in Thousands)\$ \$\$5,000 Continue common MMRT and airborne integration development \$2,001 MMRT airworthiness and nuclear certification MMRT airworthiness and nuclear certification Communications Evaluation Program (CEP)/Studies and Analysis \$13,307 ICBM LCC VLF/LF integration and development (part of MMP) \$21,809 Total	nd airborne ir rclear certifica Program (CE tion and deve	itegration de ition P/Studies a lopment (pa	velopment ind Analysis rt of MMP)						
<u>a</u>	Project 672832		Page	Page 3 of 15 Pages	es			ũ	hibit R-2A	Exhibit R-2A (PE 0303131F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	ION SHE	ET (R-2A Ex	thibit)		DATE Februal	February 2000
800 07	вирсет астилту 07 - Operational System Development	PE NU 0303 Con	PE NUMBER AND TITLE 0303131F Minimum Essential Emergency Communications Network (MEECN)	um Essentia Network (N	al Emergel IEECN)	ncy	PROJECT 672832
9	A. Mission Description Continued						
9999	FY 2001 (\$\subseteq \text{in Thousands}) \$1,409 MMRT airworthiness and nuclear certification \$1,310 Communications Evaluation Program (CEP)/Studies and Analysis \$2,719 Total	tudies and Ana	lysis				
9	B. Project Change Summary None						
<u>(5)</u>	C. Other Program Funding Summary (\$ in Thousands) FY 1999 FY 2000 A chall Ferimate	FY 2001 FY 2002 Estimate Festimate	002 EY 2003	EY 2004 Estimate	EY 2005 Estimate	Cost to Complete	Total Cost
<u>(c)</u>	APPN 10, Aircraft 0 5,003 Procurement - AF, (MEECN, PE 0303131F, BA 5, P-1 XX)	•			0	0	32,295
9	D. Acquisition Strategy Modified Miniature Receive Terminal (MMRT) Progras Systems Center, Hanscom AFB, MA, as the lead agency (National Airborne Operations Center (NAOC)); E-6B (Airborne MMRT production contract award planned for VLF/LF EMD began in FY99. ICBM LCC VLF/LF EN referred to as the Minuteman MEECN Program (MMP)	o satisfy both the xisting Miniatur and Move Out oyment of airbo production were production were prime Integratiful.	m. Program to satisfy both the Air Force and Navy requirements via a joint effort with the Air Forcy. Modifies existing Miniature Receive Terminals (MRTs). EMD contract awarded in FY96 for the (Take Charge and Move Out (TACAMO)); and an option for the ICBM Launch Control Centers (Lef FY00. Deployment of airborne Air Force and Navy MMRT units will be complete by 2003. ICB AD tasks and production were coupled with the MEECN EHF effort contractually. The combined the ICBM Prime Integrating Contract (through OO-ALC) is being used as a contracting vehicle.	avy requirement als (MRTs). EM an option for the Navy MMRT ur MEECN EHF ei th OO-ALC) is the	s via a joint ef ID contract aw ICBM Launc nits will be cor ffort contractu	fort with the Air I varded in FY96 fo charded in FY96 for the control Centers uplete by 2003. I ally. The combine to contracting vehicles	Force Electronics or the E-4B s (LCCs). ICBM LCC ed program is cle.
<u> </u>	E. Schedule Profile	E E	FY 1999 2 3 4	1 2 EX	FY 2000 2 3 4	1 2	FY 2001 2 3 4
9999	Complete EMD for E-4B Aircraft MMRT Aircraft Milestone III Decision EMD Contract Award - ICBM LCC VLF/LF Preliminary Design Review - LCC VLF/LF	*	*	×	×		
	Project 672832	Page 4 of 15 Pages	5 Pages			Exhibit R-2A (Exhibit R-2A (PE 0303131F)
		1001					

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 2000
вирсет Астіvіту 07 - Operational System Development	PE NUMBER AND TITLE 0303131F Minimum Essential Emergency Communications Network (MEECN)	PROJECT n cy 672832
(U) E. Schedule Profile Continued	FY 1999 FY 2000 2 3 4 1 2 3 4	FY 2001 1 2 3 4
 (U) Critical Design Review - LCC VLF/LF (U) Milestone III Decision - LCC VLF/LF (U) Production Start - LCC VLF/LF * Indicates completed task X Indicates planned task 	*	××
Project 672832 Pa	Page 5 of 15 Pages	Exhibit R-2A (PE 0303131F)

	RDT&E PROGRAM ELEMENT	AM ELE		I/PROJECT C	OST BR	COST BREAKDOWN (R-3)	VN (R-3)		DATE Fe	February 2000	00
80E 07	вирсет АСТІVІТУ 07 - Operational System Development	velopmer	#		PE NUMBE 030313 Commu	PE NUMBER AND TITLE 0303131F Minimum Essential Emergency Communications Network (MEECN)	ım Essent Network (ial Emerg MEECN)	ency	ā 9	РRОЈЕСТ 672832
9	A. Project Cost Breakdown (\$ in Thousands)	in Thousand	(8)				FY 1999	666	FY 2000	00	FY 2001
<u> </u>	Prime Contract (MMRT) ICBM VLF/LF Development (MMP)	4MP)					2,7	7,830	5,000	0 6	1,189
999	Te						rri	0 3.100	0	0 0	0 0
999	Navy Program Management Administration (PMA)	tration (PMA)						300	, 600 391	1	100
<u> </u>							1, 22,	1,370 22,260	1,411	1	1,310 2,719
9	B. Budget Acquisition History and Planning Information (\$ in Thousands)	and Plannin	g Information	(\$ in Thousand	(ছা						
3	Performing Organizations:										
	Contractor or Government	Contract Method/Type	Award or	Performing	Project			,			Ē
	Performing O	or Funding Vehicle	<u>Obligation</u> Date	Activity EAC	Office EAC	Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Sudget to Complete	lotal Program
	Product Development Organizations	ations SS/CPAF	Aug 92	13.500	13.500	13,500				0	13,500
	vell	SS/CPAF	Jul 96	47,916	47,916	33,836	7,830	5,000	1,189	Continuing	TBD
	TRW SS/CPAF	SS/CPAF	Mar 99	N/A	N/A	0	9,000	13,307		>	700,77
	SE/TA [SRC, ASEC, MCR L		· Annual			1,942	009	391	120	Continuing	TBD
	ATT, ANSER]	3O 1	Amniot			131				Continuing	TBD
		Various	Annual			484	300	009	100	Continuing	TBD
	VAR SysCen (CEP)	MIPR	Annual			1,068	1,370	1,411	1,310	Continuing	TBD
	ALCs	MIPR	Annual			355				0	355
	Project 672832			Pag	Page 6 of 15 Pages	ges			Exhib	Exhibit R-3 (PE 0303131F)	03131F)

	RDT&E PROGRAM ELEMENT		PROJECT COST BREAKDOWN (R-3)	DOWN	(R-3)		DATE Fe	February 2000	00
90E	вирдет Астіvіту 07 - Operational System Development	ent	PE NUMBER AND TITLE 0303131F Minimum Essential Emergency Communications Network (MEECN)	⊓⊤∟E inimum tions Ne	Essenti twork (I	al Emerg AEECN)	ency	9	РRОЈЕСТ 672832
(3)	Performing Organizations Continued: Test and Evaluation Organizations NavAir Warfare Center MIPR Air Force MIPR	Annual Annual	1	1,954 204	3,100	1,100		0	6,154
9	Government Furnished Property: Contract Method/Type Item Or Funding Description Vehicle Product Development Property N/A	Award or Obligation Delivery Date Date	Total Prior to FY 1999		Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
	Support and Management Property N/A Test and Evaluation Property N/A Subtotals Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project		Total Prior to FY 1999 47,336 3,980 2,158 53,474	·	Budget FY 1999 16,890 2,270 3,100 22,260	Budget FY 2000 18,307 2,402 1,100 21,809	Budget FY 2001 1,189 1,530 2,719	Budget to Complete TBD TBD 0	Total Program TBD TBD TBD 6,358
	Project 672832		Page 7 of 15 Pages				Exhibi	Exhibit R-3 (PE 0303131F))3131F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	STIFIC/	ATION S	SHEET (R-2A E	xhibit)	;	DATE	February 2000	ry 2000
BUDG 07 -	BUDGET ACTIVITY O7 - Operational System Development			PE NUMBER AND TITLE 0303131F Minin Communication	PENUMBER AND TITLE 0303131F Minimum Essential Emergency Communications Network (MEECN)	um Esse s Networ	ential Em k (MEEC	ergency N)		PROJECT 674521
	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
674521	1 DIRECT	3,321	1,171	1,236	1,135	873	290	290	Continuing	TBD
This ICBN (BPA	This project was established in Jan 96 to consolidate efforts related to DIRECT planned for accomplishment in PE 0603851F, ICBM Modernization Dem/Val (BPAC 1024, ICBM C2 Applications), PE 0604851F, ICBM Modernization EMD (BPAC 13C4, Strategic C4 Program), PE 0101213F, Minuteman Squadrons, and 0303131F, MEECN (BPAC 2832, VLF/LF System Improvements).	related to D on EMD (B)	IRECT plar PAC 13C4,	med for acco Strategic C4	mplishment Program), P	in PE 0603	851F, ICBM	Moderniza n Squadrons	tion Dem/Va s, and 03031.	1 (BPAC 1024, 31F, MEECN
9	A. Mission Description The Defense IEMATS Replacement Command and Control Terminals (DIRECT), which is the Improved Emergency Message Automated Transmission System (IEMATS) replacement program, is a Strategic Nuclear Command and Control (C2) system directly supporting the Chairman of the Joint Chiefs of Staff (CJCS) and the National Command Authorities (NCA). DIRECT will provide for all current IEMATS requirements, including the build, release, and transmission of Emergency Action Messages (EAM) to allow the CJCS and warfighters to remain responsive to NCA directives. This program will procure system hardware for seven unified command centers, a software maintenance facility and two alternate command centers. DIRECT will be compatible with the Defense Message System (DMS) when it supplants the Automated Digital Network (AUTODIN) and will interface with all other EAM distribution communications systems. AUTODIN is scheduled for closure not later than the 2QCY00.	Control Term car Comman Il provide fo to remain re mate comma	uinals (DIRE d and Contr r all current sponsive to nd centers. vith all other	SCT), which of (C2) syste IEMATS re NCA directi DIRECT wi	is the Impro in directly significants, ves. This pr Il be compat bution comn	ved Emerge upporting th including th ogram will t iible with the nunications	ncy Message e Chairman e build, reles procure syste e Defense M	e Automatec of the Joint ase, and tran am hardware essage Syste	1 Transmissi Chiefs of Str Ismission of for seven un em (DMS) w	ontrol Terminals (DIRECT), which is the Improved Emergency Message Automated Transmission System ar Command and Control (C2) system directly supporting the Chairman of the Joint Chiefs of Staff (CJCS) and the I provide for all current IEMATS requirements, including the build, release, and transmission of Emergency Action o remain responsive to NCA directives. This program will procure system hardware for seven unified command nate command centers. DIRECT will be compatible with the Defense Message System (DMS) when it supplants interface with all other EAM distribution communications systems. AUTODIN is scheduled for closure not later
55555	\$2,891 Continued DIRECT Engineering and Manufacturing Development \$2,891 Communications Evaluation Program (CEP)/Studies and Analysis \$230 Test Total	ing and Man rogram (CE	ufacturing I P)/Studies a	ig and Manufacturing Development (EMD) ogram (CEP)/Studies and Analysis	(EMD)					
9999	 FY 2000 (\$\\$\$ in Thousand\$\\$\$) \$921 DIRECT EMD \$250 Communications Evaluation Program (CEP)/Studies and Analysis \$1,171 Total 	Program (CE	.P)/Studies a	ınd Analysis						
Δ.	Project 674521		Page	Page 8 of 15 Pages	S			Û	chibit R-2A	Exhibit R-2A (PE 0303131F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	ET ITEN	JUSTIF	CATION	SHEET (F	8-2A Exh	ibit)	Ō	DATE February 2000	, 2000
80DC 07 -	вирсет астилту 07 - Operational System Development	/elopment			PE NUMBER AND TITLE 0303131F Minim Communication	PE NUMBER AND TITLE 0303131F Minimum Essential Emergency Communications Network (MEECN)	n Essentia etwork (M	il Emergen EECN)	ıcy	PROJECT 674521
(n)	A. Mission Description Continued	pəi			i					
9999	FY 2001 (\$ in Thousands) \$988 DIRECT/I \$248 Communic \$1,236 Total	nds) DIRECT/DMS Interface EMD Communications Evaluation Pr Total	EMD tion Program	(CEP)/Studies	nds) DIRECT/DMS Interface EMD Communications Evaluation Program (CEP)/Studies and Analysis Total					
9	B. Project Change Summary None									
<u>e</u>	C. Other Program Funding Summary (\$ in Thousands) FY 1999 Actual Estimate	nmary (\$ in 7 EX 1999 Actual	Thousands) EY 2000 Estimate	EX 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	EX 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
<u> </u>	APPN 16, Other Procurement - AF, Electronics and Telecommunications Equip (MEECN, PE 0303131F, BA 3, P-1 XX)	1,502	5,122	1,584	2,076	1,085	0	0	0	23,028
<u>e</u>	D. Acquisition Strategy DIRECT Program. A contract for EMD was awarded to GTE Government Systems (now General Dynamics-Communications Systems), Needham, MA on 12 Jul 96. A contract modification for production (using Other Procurement, AF) was awarded 11 Aug 98.	r EMD was av ion (using Oth	varded to GTE er Procuremen	Government it, AF) was aw	Systems (now Crarded 11 Aug 9	Jeneral Dynam 18.	ics-Communi	cations Systen	ıs), Needham, MA	on 12 Jul 96. A
<u> </u>	E. Schedule Profile			1	FY 1999 2 3	4	1 2 1	<u>FY 2000</u> 2 3 4	1 2	FY 2001 2 3 4
999	Development Test and Evaluation Functional Qual Test Begin DIRECT/DMS Interface EMD * Indicates completed task X Indicates planned task	a MD			* *				×	
11	Project 674521	į		Pa	Page 9 of 15 Pages	S			Exhibit R-2A (PE 0303131F)	E 0303131F)

Project Formury Project Fo		RDT&E PROGRAM ELEMENT	SAM ELE		/PROJECT CO	OST BE	COST BREAKDOWN (R-3)	VN (R-3)		DATE Fe	February 2000	00	
A. Project Cost Breakdown (S in Thousands) Prime Contract For Ex. 1591 FY 2000 FY 2000 <th colspan<="" th=""><th>80D 07</th><th>овет Астіvіту - Operational System D</th><th>evelopmer</th><th>ıt</th><th></th><th>PE NUMBE 030313 Comm</th><th>R AND TITLE 1F Minimu Inications</th><th>ım Esseni Network</th><th>tial Emerg (MEECN)</th><th>ency</th><th>4 9</th><th>ROJECT 74521</th></th>	<th>80D 07</th> <th>овет Астіvіту - Operational System D</th> <th>evelopmer</th> <th>ıt</th> <th></th> <th>PE NUMBE 030313 Comm</th> <th>R AND TITLE 1F Minimu Inications</th> <th>ım Esseni Network</th> <th>tial Emerg (MEECN)</th> <th>ency</th> <th>4 9</th> <th>ROJECT 74521</th>	80D 07	овет Астіvіту - Operational System D	evelopmer	ıt		PE NUMBE 030313 Comm	R AND TITLE 1F Minimu Inications	ım Esseni Network	tial Emerg (MEECN)	ency	4 9	ROJECT 7 4521
Prime Contract Test Program Management Administration (PMA) MITTRE Sacriation Annual Security Agency MITTRE Notice Bridget Acquisition Mistation (PMA) MITTRE Sacriation Management Administration (PMA) MITTRE Budget Acquisition Mistation (PMA) Budget Acquisition Mistation (PMA) Sacriation Method/Type Award or Performing Project Goodinactor of Contractor Contractor Organizations Sacriation Method/Type Award or Performing Project Goodinactor of Contractor Organizations Sacriation Mistation Mistation Mistation Mistation Sacriation Mistation Sacriation Sacriation Mistation Sacriation Mistation Sacriation Mistation Sacriation Sacriation Mistation Mistation Sacriation Mistation Sacriation Mistation Mistati	3		S in Thousand	ঙ				 FY 1	666	FY 200	00	FY 2001	
Program Management Administration (PMA) Program Management Organizations Part Organizat	<u>e</u>	Prime Contract						-	591	58	1 ~ (588	
National Security Agency Aurical State A	55	Test Program Management Admini	stration (PMA)						200 300	8 8	o 4 c	100	
B. Budget Acquisition History and Planning Information (S in Thousands) Performing Organizations: Contractor of Contractor	<u> </u>							, m	400 600 230 321	20 20 1,17	001	248 1,236	
Performing Organizations: Contract Performing Organizations: Project Project Total Prior Budget Date Date Date Date Date Date Date Da	3		y and Planning	Information	(\$ in Thousand	ા							
Contract	3	-											
Method/lype Award or Performing Project Vehicle Date Date Deligation Activity Office EAC to FY 1999 EY 2000 EY 2001 EY 2001 Complete ER 2000 EY 2001 Complete EX 2000 EY 2001 EY 2001 Complete EX 2000 EY 2001 EX 2001			Contract	•									
Vehicle opment Organizations Date opment Organizations EAC EA			Method/1ype or Funding	<u>Award or</u> Obligation	Performing Activity	Project Office	Total Prior	Budget	Budget	Budget	Budget to	Total	
Opment Organizations Jul 96 30,290 30,290 27,480 1,591 587 588 Continuing city Agency MIPR Annually 2,500 2,500 2,500 2,500 9,00 0			Vehicle	Date	EAC	EAC	to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program	
SS/CPAF Jul 96 30,290 30,290 27,480 1,591 587 588 Continuing of the continuing of th		Product Development Organiza	ations										
tity Agency MIPR Annually 2,500 2,500 2,500 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			SS/CPAF	Jul 96	30,290	30,290	27,480	1,591	287	288	Continuing	TBD	
fanagement Organizations Annual N/A 2,027 400 300 Continuing NSER] LOE Annual N/A 2,068 600 0 0 Continuing P) LOE Annual N/A 423 230 200 248 Continuing P) LOE Annual N/A 406 271 200 0 Continuing various Annual N/A 406 271 200 0 Continuing Page 10 of 15 Pages Exhibit R-3 (PE 030313* Exhibit R-3 (PE 030313*		Il Security Agency	MIPR	Annually	2,500	2,500	2,500				0	2,500	
C, ABACUS, LOE Annual N/A 2,027 400 300 Continuing NSER] LOE Annual N/A 2,068 600 0 0 Continuing P) LOE Annual N/A 423 230 200 248 Continuing P) LOE Annual N/A 406 271 200 0 0 Continuing Page 10 of 15 Pages 271 200 0 0 Continuing		(NSA) Support and Management Organic	nizations										
LOE Annual N/A 2,068 600 0 0 Continuing		SE/TA [ASEC, ABACUS,	LOE	Annual	N/A		2,027	400	300	300	Continuing	TBD	
LOE Annual N/A 2,068 600 0 Continuing P) LOE Annual N/A 423 230 200 248 Continuing Various Annual N/A 406 271 200 0 0 Continuing Various Annual N/A 406 271 200 0 0 Continuing Page 10 of 15 Pages Exhibit R-3 (PE 030313*		MCR, ATT, ANSER]											
P) LOE Annual N/A 423 230 200 248 Continuing Various Annual N/A 405 300 84 100 Continuing Various Annual N/A 406 271 200 0 0 Continuing Page 10 of 15 Pages Page 10 of 15 Pages Exhibit R-3 (PE 030313*			LOE	Annual	N/A		2,068	009	0	0	Continuing	TBD	
Various Annual N/A 645 300 84 100 Continuing lation Organizations Various Annual N/A 406 271 200 0 0 Continuing Page 10 of 15 Pages Exhibit R-3 (PE 030313)			LOE	Annual	N/A		423	230	200	248	Continuing	TBD	
various Annual N/A 406 271 200 0 0 Continuing Various Annual Page 10 of 15 Pages Exhibit R-3 (PE 030313)			Various	Annual	N/A		645	300	84	100	Continuing	TBD	
Various Annual N/A 406 271 200 0 0 Continuing Page 10 of 15 Pages Exhibit R-3 (PE 030313*		Test and Evaluation Organizat	ions				ļ	4	¢	•		Ĺ	
Page 10 of 15 Pages		Various	Various	Annual	N/A	406	271	200	0	-	Continuing	IBD	
Page 10 of 15 Pages													
		Project 674521			Page	10 of 15 Pa	ges			Exhib	it R-3 (PE 03	03131F)	

RDT&E PROGRAM ELEMENT/PROJEC	/PROJECT COST BREAKDOWN (R-3)	NN (R-3)		date Fe	February 2000	00
вирсет астіvіту 07 - Operational System Development	PE NUMBER AND TITLE 0303131F Minimum Essential Emergency Communications Network (MEECN)	um Essenti Network (N	al Emerg AEECN)	ency	9	РКОЈЕСТ 674521
(U) Government Furnished Property: Contract Method/Type Award or Vehicle Obligation Delivery Vehicle Date Product Development Property N/A Support and Management Property NA Test and Evaluation Property N/A	Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	<u>Total</u> <u>Program</u>
Subtotals Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 1999 29,980 5,163 271 35,414	Budget FY 1999 1,591 1,530 200 3,321	Budget FY 2000 587 584 0 1,171	Budget FY 2001 588 648 0 1,236	Budget to Complete TBD TBD TBD TBD TBD	Total Program TBD TBD TBD TBD
Project 674521	Page 11 of 15 Pages			Exhibi	Exhibit R-3 (PE 0303131F)	03131F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	STIFIC/	ATION S	SHEET (R-2A E	xhibit)		DATE	Februa	February 2000
97- 20	вирдет АСТІVITY 07 - Operational System Development			PE NUMBER 0303131 Commu	PE NUMBER AND TITLE 0303131F Minim Communications	PE NUMBER AND TITLE 0303131F Minimum Essential Emergency Communications Network (MEECN)	ential Em k (MEEC	ergency N)		PROJECT 674610
	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
674610	10 MEECN EHF	12,043	22,305	11,347	389	388	290	290	Continuing	TBD
(£)	A. Mission Description This MEECN project will provide reliable, secure, and survivable communications in the Extremely High Frequency (EHF) band. Specifically, this effort is currently focused on replacing the satellite-based, ground communication links with Minuteman ICBM forces. It supplants the ICBM Super High Frequency (SHF) Satellite Terminal (ISST) receipt, providing force direction/execution, and the Ultra High Frequency (UHF) report-back links. ISST relies upon the Single Channel Transponder (SCT) package aboard the Defense Satellite Communications System (DSCS). The SCT will not be flown on the DSCS after 2003. Extending the use of SCT aboard DSCS is not practical. The UHF links depend upon the Air Force Satellite Communications (AFSATCOM) packages hosted aboard the Fleet Satellite Communications (FLTSATCOM) satellites. FLTSATCOM satellites are past their life expectancy. MEECN EHF is required to meet redundancy standards established by national security directives. MEECN EHF was identified as a new start effort in the FY99 budget documentation. This project was combined contractually with the ICBM LCC VLF/LF tasks from Project 2832 and together are referred to as the Minuteman MEECN Program (MMP).	nd survivable munication I cecution Sys the Air Force are past their a new start ef ferred to as th	communice inks with Mi the Ultra H item (DSCS) Satellite Co Ilfe expecta fort in the F	ations in the inuteman IC igh Frequen). The SCT ommunicatic mcy. MEEC Y99 budget an MEECN I an MEECN I	Extremely F BM forces. cy (UHF) rej will not be f ons (AFSAT N EHF is re documentat	ligh Frequer It supplants port-back lin lown on the COM) packa	ncy (EHF) by the ICBM Siks. ISST re DSCS after ages hosted a gest redundan	and. Specifiuper High Flies upon the 2003. Exter aboard the Flory standard nbined controlled.	cally, this efrequency (S) e Single Charding the use leet Satellite s established ractually witl	survivable communications in the Extremely High Frequency (EHF) band. Specifically, this effort is currently unication links with Minuteman ICBM forces. It supplants the ICBM Super High Frequency (SHF) Satellite cution, and the Ultra High Frequency (UHF) report-back links. ISST relies upon the Single Channel Transponder sations System (DSCS). The SCT will not be flown on the DSCS after 2003. Extending the use of SCT aboard a Air Force Satellite Communications (AFSATCOM) packages hosted aboard the Fleet Satellite Communications a past their life expectancy. MEECN EHF is required to meet redundancy standards established by national new start effort in the FY99 budget documentation. This project was combined contractually with the ICBM LCC red to as the Minuteman MEECN Program (MMP).
99999	FY 1999 (\$ in Thousands) \$10,427 Engineering and Manufacturing Development (EMD) \$1,568 Integration and Test \$48 Communications Evaluation Program (CEP)/Studies and Analysis \$12,043 Total	ng Developm Program (CE	Development (EMD) gram (CEP)/Studies a	nd Analysis						
99999	\$15,067 (\$\tilde{s}\$ in Thousands)\$ \$15,067 Continue EMD \$7,105 Integration and Test \$133 Communications Evaluation Program (CEP)/Studies and Analysis \$22,305 Total	Program (CE	P)/Studies a	nd Analysis						
О.	Project 674610		Page	Page 12 of 15 Pages	səś			Ď	hibit R-2A (Exhibit R-2A (PE 0303131F)

	RDT&E BUDGET ITEM JUS	JUSTIFI	CATION	TIFICATION SHEET (R-2A Exhibit)	2-2A Exh	libit)	DA	DATE February 2000	2000
80D 07.	вирсет Астіліту 07 - Operational System Development	:		PE NUMBER AND TITLE 0303131F Minim Communication	AND TITLE Minimur cations N	PE NUMBER AND TITLE 0303131F Minimum Essential Emer Communications Network (MEECN)	PE NUMBER AND TITLE 0303131F Minimum Essential Emergency Communications Network (MEECN)	cy	PROJECT 674610
Ð	A. Mission Description Continued	-							
99999	FY 2001 (\$\secondormal{\secondormal{s}}\$ in Thousands) \$6,439 Continue EMD \$4,758 Integration and Test \$150 Communications Evaluation Program (CEP)/Studies and Analysis \$11,347 Total	ion Program (CEP)/Studies &	and Analysis					
9	B. Project Change Summary None								
<u>e</u>	C. Other Program Funding Summary (\$ in Thousands) EY 1999	housands) FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to	Total Cost
5	Actual APPN 14, Missile Procurement -AF, (MEECN, PE 0303131F, BA 3, P-1 12)	Estimate 0	<u>Estimate</u> 48,069	Estimate 43,502	<u>Estimate</u> 8,563	<u>Estimate</u> 6,724	Estimate 5,795	Complete 0	112,653
<u>e</u>	D. Acquisition Strategy The ICBM Prime Integrating Contract (through OO-ALC) is being used as a contracting vehicle for the Minuteman LCC VLF/LF and EHF modifications known as Minuteman MEECN Program (MMP).	00-ALC) is b	eing used as a	contracting ve	hicle for the N	ɗinuteman LCC	CVLF/LF and I	EHF modifications	known as
9	E. Schedule Profile		1	FY 1999 2 3	4	EY 2	FY 2000 2 3 4	FX 2001	3 4
9	EMD Contract Award			*					
99	Preliminary Design Review Critical Design Review			*	*				
99	Milestone III Decision Production start							××	
	Indicates completed task X Indicates planned task								
т.	Project 674610		Page	Page 13 of 15 Pages	S			Exhibit R-2A (PE 0303131F)	= 0303131F)

	RDT&E PROGRAM ELEMENT		/PROJECT C	OST BF	COST BREAKDOWN (R-3)	WN (R-3)		DATE Fe	February 2000	00
800 07	вирбет астімту 07 - Operational System Development	ent		PE NUMBE 030313 Commu	PENUMBER AND TITLE 0303131F Minimum Essential Emergency Communications Network (MEECN)	ım Essent Network (tial Emerg MEECN)	Jency	± U	РRОЈЕСТ 674610
(n)	A. Project Cost Breakdown (\$ in Thousands)	(spur				FV 1000	000	FY 2000	9	FY 2001
<u> </u>	Prime Contract					11,195	195	20,684	₹ •	10,497
<u> </u>	Test Program Management Administration (PMA)	(A)				.,	200 400	/88 100 400	တ် ဇာ င	100
<u> 3333</u>	SETA MITRE CEP Total					; ; 12,0	200 200 48 12,043	200 200 133 22,305	5	200 200 150 11,347
3	B. Budget Acquisition History and Planning Information (\$ in Thousands)	ing Informatio	n (\$ in Thousand	(3)						
9	Performing Organizations:									
	ā :	e Award or	Performing	Project			1	r T	D.:.d	T.
	Pertorming or Funding Activity Vehicle	Obligation Date	Activity	EAC	to FY 1999	EY 1999	FY 2000	EY 2001	Complete	Program
	Development Organiz									
	TRW SS/CPAF	Mar 99			0	11,195	20,684	10,497	Continuing	TBD
	Support and Management Organizations	I create A			c	700	700	400	Continuing	TRD
	SE/IA [SRC, MCK, AII, LOE ANSER]	Aminai			>) t	P F	P	Summing	
		Annual			0	200	200	200	Continuing	TBD
		Annual			0	200	100	100	Continuing	TBD
		Aminai			>	t 0	661	OCT.	Continuing	771
	Lest and Evaluation Organizations Various	Annual			0	0	788	0	0	788
ш.	Project 674610		Page	Page 14 of 15 Pages	ges			Exhit	Exhibit R-3 (PE 0303131F)	303131F)

RDT&E PROGRAM ELEMENT/PROJECT	COST BREAKDOWN (R-3)	VN (R-3)		DATE Fe	February 2000	0
вирсет астіvіту 07 - Operational System Development	PE NUMBER AND TITLE 0303131F Minimum Essential Emergency Communications Network (MEECN)	ım Essent Network (tial Emerg (MEECN)	lency	id 9	РКОЈЕСТ 674610
(U) Government Furnished Property: Contract Method/Type Award or Method/Type Award or Item or Funding Obligation Delivery Description Vehicle Date Product Development Property N/A Support and Management Property N/A Test and Evaluation Property	Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	<u>Total</u> Program
Subtotals Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 1999 0 0 0 0 0 0	Budget FY 1999 11,195 848 0 12,043	Budget FY 2000 20,684 833 788 22,305	Budget EY 2001 10,497 850 0 11,347	Budget to Complete TBD TBD 0 TBD	Total Program TBD TBD 788 TBD
Project 674610	Page 15 of 15 Pages			Exhibi	Exhibit R-3 (PE 0303131F)	3131F)

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PE NUMBER: 0303140F PF TITI E: Information Systems Sec

PE TITLE: Information Systems Security Program

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	JSTIFIC	ATION	SHEET	(R-2 Ex	hibit)		DATE	February 2000	ry 2000
BUDGET 07 - O	вирсет астіліту 07 - Operational System Development			PE NUMBER AND TITLE 0303140F Inforr	AND TITLE FINFORD	nation Sy	PE NUMBER AND TITLE 0303140F Information Systems Security Program	ecurity P	rogram	
	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	7,754	19,381	7,212	6,944	7,017	7,155	7,296	Continuing	TBD
674579	674579 Information Warfare	1,920	9,407	1,892	1,882	1,869	1,906	1,943	Continuing	TBD
674585	674585 Cryptologic 2020	1,957	1,233	0	0	0	0	0	0 Continuing	TBD
677820	Computer Security RDT&E: Firestarter	3,877	8,741	5,320	5,062	5,148	5,249	5,353	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0
	TA 1 1 0 111. 0000 . 1 0 1011	2,0,00								

BPAC 674585, Cryptologic 2020, will be funded under PE 33401F, Comm Sec, BPAC 674861, Cryptologic 2020, beginning in FY01.

J) A. Mission Description

This program provides the capability to protect and defend USAF Command, Control, Communications, Computers, and Intelligence, Surveillance, and Reconnaissance information protection tools and transitions them to operational systems. It also provides the acquisition community and operational warfighters the ability to manage their own risks relative to mission, task, threat, and vulnerability information; and to mitigate IW risks based on rank-ordered countermeasure recommendations. The (C4ISR) and Weapon Systems from Information Warfare (IW) attacks and recover from those attacks. Primarily, the project does research and development of program element consists of three complimentary projects.

callwords, and Communications Security (COMSEC) publications for the F-22. AFEKMS replaces the existing physical distribution and management system providing National Security Agency's (NSA's) EKMS, provides a secure and flexible capability for the electronic generation, distribution, and management of key material, voice COMSEC KEYS for USAF Information Protection. The Air Force unique AFEKMS software is required because the production software developed by NSA cannot provide the capabilities to distribute the system keys in the format needed by the F-22 Mission Support System. The Information Warfare project comprises R&D for The computer security project directs the R&D of information protection technology and tools to defend C4ISR systems, with emphasis on computer and network systems security, damage assessment and recovery, and multi-level systems security. It provides access control, integrity, assured services and meets warfighter's requirements. The Cryptologic 2020 project comprises R&D for the Air Force Electronic Key Management System (AFEKMS). The AFEKMS, in concert with Vulnerability Assessment/Risk Management (IW VA/RM) and Technology planning to build information protection into all AF C4ISR and weapons systems.

Page 1 of 16 Pages

Exhibit R-2 (PE 0303140F)

1267

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TION SHEET (R-2 Exhib	oit)	DATE February 2000	000
BUD(07 -	вирсет астіvіту 07 - Operational System Development	PE NUMBER AND TITLE 0303140F Information Systems Security Program	on Systems Sec	curity Program	
<u> </u>	B. Budget Activity Justification This program is in budget activity 7, Operational System Development, because it addresses the development and transition of information security, protection and defensive capabilities and technologies.	nt, because it addresses the developme	ent and transition of in	nformation security, protecti	on and
3	C. Program Change Summary (\$\sin Thousands)	1000 FV	FV 2000	EV 2001	Total Cost
9	Previous President's Budget (FY 2000 PBR)	9,277	7,992	7,284	TBD
9	Appropriated Value	9,420	19,492		
9_	Adjustments to Appropriated Value a. Congressional/General Reductions	-143	ς <u>-</u>		
,	b. Small Business Innovative Research	-498			
	c. Omnibus or Other Above Threshold Reprogram		-106		
	d. Below Threshold Reprogram	-981			
	e. Rescissions	44			
	f. Other				TBD
56	Adjustments to Budget Years Since FY 2000 PBR Current Budget Suhmit/FY 2001 PBR	4277	19 381	-72 7 2 1 2	TRD
9			100,	1116	
<u> </u>	Significant Program Changes: Funding: Congressional \$7.0M add in FY00 for management of the Cyber Lighthouse Security Technology Program, and \$4.5M add for continued development of the Secure Interoperable Distributed Computing Systems project.	Cyber Lighthouse Security Technolog	sy Program, and \$4.5N	A add for continued develop	oment of the
		Page 2 of 16 Pages		Exhibit R-2 (PE 0303140F)	303140F)
		1 450 4 01 10 1 4500		,, 1	

RDT&E BUDGET ITEM JU	STIFICA	TION S	STIFICATION SHEET (R-2A Exhibit)	R-2A E	xhibit)	:	DATE	February 2000	, 2000
вирбет астіvіту 07 - Operational System Development			PE NUMBER 0303140	PE NUMBER AND TITLE 0303140F Inform	nation Sy	PE NUMBER AND TITLE 0303140F Information Systems Security Program	ecurity F	rogram	PROJECT 674579
COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
674579 Information Warfare	1,920	9,407	1,892	1,882	1,869	1,906	1,943	1,943 Continuing	ТВD

(U) A. Mission Description

provides the acquisition community and operational warfighters the ability to manage the IW risks to their missions and operational tasks based on system threat and vulnerability information. Provides decision makers with countermeasures recommendations, rank-ordered based on operational utility and relative cost. Looking Builds information protection into all AF Command and Control (C2), Intelligence, Surveillance, and Reconnaissance (ISR), and weapons systems. The project across all assessments conducted on AF systems, the project also provides the USAF a unique system-of-systems perspective for managing shared IW risks.

of AFPD 10-20, para 12. The IW VA/RM program enhances a commercially-available risk management tool so that it (1) provides risk management solutions based on shared Information Warfare (IW) risks across all AF C2 and weapon systems. This will enable AF acquisition programs to meet the information assurance requirements with the data and supporting infrastructure will enable all AF System Program Offices (SPOs) to evaluate their IW risks and propose mission-based mitigation strategies Information Warfare Vulnerability Assessment and Risk Management (IW VA/RM): Development and sustainment of a new capability to manage both individual and future TVC data production and distribution, similar to that established under AFI 10-703, Electronic Warfare Integrated Reprogramming (EWIR). Together, the tool mission impact and user cost; and (2) seamlessly combines government Threat, Vulnerability and Countermeasure (TVC) data with commercial TVC data at point of use. The IW VA/RM program also initiates the production of the Government TVC data; and the process of setting up a management infrastructure to coordinate all establishes the means to aggregate individual SPO risk assessment results and report them based on higher-echelon mission impact. These reports will provide vital to their users as part of a coordinated, coherent effort. To provide the overview needed to manage the shared risk across all AF systems, the IW VA/RM program information on trends, deficiencies, and rationale for the AF Modernization Planning process.

deficiencies. Develops and coordinates technology development and acquisition plans for resolving mission area deficiencies. Provides Government laboratories and IW Technical Planning Integrated Product Team (IW TPIPT). Supports modernization planning for Counterinformation (CI) Mission Area and technology planning processes. Continuously identifies and evaluates commercial and Government inventory of available products that can be used to meet Counterinformation mission private industry guidance on new technologies needed for the next 10 to 25 years.

Page 3 of 16 Pages Project 674579

Exhibit R-2A (PE 0303140F)

	RDT&E BUDGET ITEM JUST	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	DATE February 2000	2000
900 07 -	BUDGET ACTIVITY 17 - Operational System Development	PE NUMBER AND TITLE 0303140F Information Systems Security Program	rity Program	PROJECT 674579
(D)	A. Mission Description Continued			
<u> </u>	FY 1999 (\$ in Thousands) \$700 Continued exportable VA/RM process and toolset developmet Established infrastructure: Intelligence support, metrics meast Continued developing libraries and databases, system-of-system Continued IW TPIPT activities, analyses, database support Conducted integrated cross program assessments and solution \$1,920 FY 2000 (\$ in Thousands) S1,278 Continue exportable VA/RM process and toolset development Establish infrastructure: Intelligence support, metrics, etc. Continue to develop and update libraries and databases, system Continue integrated cross program assessments and solution de Manage Cyber Lighthouse Security Technology Development Total EX 2001 (\$ in Thousands) S1,034 Continue exportable VA/RM process and toolset development S9,407 Total EX 2001 (\$ in Thousands) S1,034 Continue to develop and update libraries and databases, system Continue to develop and update libraries and databases, system Continue to develop and update libraries and databases, system Continue to develop and update libraries and databases, system Continue to integrate cross program assessments and solution (\$ 11,892 Total B. Project Change Summary N/A	Continued exportable VA/RM process and toolset development Established infrastructure: Intelligence support, metrics measurement, etc. Continued developing libraries and databases, system-of-systems model Conducted integrated cross program assessments and solution development Total Libraries and toolset development Gontinue exportable VA/RM process and toolset development Establish infrastructure: Intelligence support, metrics, etc. Continue to develop and update libraries and databases, system-of-systems model Continue IW TPIPT activities, analyses, database support Continue Establish infrastructure: Intelligence support assessments and solution development Manage Cyber Lighthouse Security Technology Development Program (Congressional add) Idsiablish and support existing infrastructure: Intelligence support, metrics, etc. Continue to develop and update libraries and databases, system-of-systems model Continue to integrate cross program assessments and solution development Total Managr		
۵	Project 674579	Page 4 of 16 Pages	Exhibit R-2A (PE 0303140F)	. 0303140F)

	RDT&F BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	JUSTIFIC	SATIO	SHEET	(R-2A Ex	hibit)		DATE		February 2000	 8
BUD	BUDGET ACTIVITY			PE NUMBE	PE NUMBER AND TITLE						PROJECT 671570
6	07 - Operational System Development			0303140F	Ur Intorm	Information Systems Security Program	ec suit	Zilliz	rogran		143/3
9	C. Other Program Funding Summary (\$ in Thousands) FY 1999 FY 2000 Actual Estimate	iousands) FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	ate 65	Cost to Complete	. 6	Total Cost
99	AF RDT&E Other APPN none										
9	D. Acquisition Strategy All major contracts within this Program Element are awarded after full and open competition.	are awarded a	fter full an	i open competi	ition.						
9	E. Schedule Profile			FY 1999	% 4	EY 1 2	FY 2000 2 3	4	-	FY 2001	4
9		A/RM proces:	process & tool *	1	· *	· *	×		×		×
9	set Develop and iterate versions of the infrastructure, librar	, libraries, and	*		*	*	×		×		×
99		pport, metrics		*		*					
<u>(</u> 2)		program asses	sments *	ų	*	*	×		×		×
99	and s Sustain IW TPIPT technology database (quarterly reviews) Sustain IW TPIPT technology development plan (annual)	y reviews) (annual)	•	*	* *	*	××	×		× ×	××
<u>(5)</u>			-	*	*	*	×		×	^	~
	Project 674579			Page 5 of 16 Pages	Səgi			Ш	Exhibit R-2A (PE 0303140F)	A (PE 03	303140F)

	RDT&E PROGRAM ELEMENT	RAM ELE		/PROJECT CO	COST BREAKDOWN (R-3)	EAKDOV	VN (R-3)		DATE Fe	February 2000	000
20 0	вирсет астилту 07 - Operational System Development	evelopme	nt		PE NUMBER AND TITLE 0303140F Inform	AND TITLE F Informa	ıtion Syst	PE NUMBER AND TITLE 0303140F Information Systems Security Program	ırity Prog		РВОЈЕСТ 674579
(U)	A. Project Cost Breakdown (\$ in Thousands)	S in Thousand	IS)				FV 1000	000	FV 2000	9	FV 2001
555	Software development Systems engineering support Program management support);	702 1,082 136	4,480 4,264 663	3 2 4 W i	847 920 125
3 9	Total B. Budget Acquisition History and Planning Information (\$ in Thousands)	y and Plannin	g Information	(\$ in Thousands	ଜ		I,	1,920	9,407	<u>.</u>	1,892
<u> </u>	Performing Organizations: Contractor or Government	Contract Method/Type	Award or	Performing	Project						
	Performing or Fur Activity Vehic Deceluse Deceluse Decelusers	or Funding Vehicle	<u>Obligation</u> <u>Date</u>	Activity EAC	Office 1 EAC to	Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	<u>Total</u> Program
	Trident Data Systems MITRE	AUXID FFP FFRDC	Aug 98 On-going			0 0	822	1,097	820	Continuing 0	TBD 2.332
	Labs e-Mellon Software	FFRDC	On-going On-going			00	00	2,333	0 0	0 0	2,333
	E G	nizations)								
	MITRE ITSP (various)	FFRDC ID/IQ	On-going On-going			0 0	480	729 371	765 232	Continuing Continuing	TBD
	Test and Evaluation Organizations Test & Evaluation	suoi			•	0	135	212	75	Continuing	TBD
	Subtotals Subtotal Product Develonment				, <u>†</u>	1 0 tal F 10 0 to FY 1999	EY 1999 822	EY 2000 8 095	EY 2001 820	Complete TBD	Program TRBD
	Subtotal Support and Management Subtotal Test and Evaluation	nent				000	963	1,100	997	TBD	TBD
	Total Project					0	1,920	9,407	1,892	TBD	TBD
	Project 674579			Page	Page 6 of 16 Pages	S			Exhib	Exhibit R-3 (PE 0303140F)	303140F)

	RDT&	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	STIFIC/	ATION 8	SHEET (R-2A E	xhibit)		DATE	February 2000	v 2000
BUD 07	вирбет АСТІVІТУ 07 - Operational Sy	вирсет астіліту 07 - Operational System Development			PE NUMBER 0303140	PE NUMBER AND TITLE 0303140F Inform	PE NUMBER AND TITLE 0303140F Information Systems Security Program	/stems S	ecurity F	Program	PROJECT 674585
	COST (\$ i	COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
674585	85 Cryptologic 2020		1,957	1,233	0	0	0	0	0	Continuing	TBD
Ð	A. Mission Description NOTE: FY99 through F	A. Mission Description NOTE: FY99 through FY00 funds are in PE 33140. Beginning in FY01, this effort will be funded in PE 33401.	Beginning in	n FY01, this	effort will b	e funded in	PE 33401.				
	The Cryptologic proj flexible capability fo publications for all A Information Protectic three tier system stru- for COMSEC keying	The Cryptologic project consists of Air Force Electronic Key Management Systems (AFEKMS). AFEKMS, in concert with NSA's EKMS, provides a secure and flexible capability for the electronic generation, distribution, accounting, and management of key material, voice callwords, and communications security (COMSEC) publications for all AF weapon systems. AFEKMS replaces the existing physical distribution and management system providing COMSEC keying material for USAF Information Protection. Information Protection emphasizes access control, multi-level secure databases, trusted computing and information integrity. AFEKMS is a three tier system structure in a hierarchical arrangement. This tiered structure provides 'wholesale' to 'retail' to 'ronsumer' capability to distribute, manage and account for COMSEC keying material. Tier 1 installations comprise the 'wholesale' capability. Tier 2 installations comprise the distribution network and tier 3 comprises the	nic Key Mar bution, acco eplaces the e nasizes acces ent. This tier omprise the 'v	nagement Sy unting, and 1 xisting phys s control, m ed structure wholesale' ca	stems (AFE management sical distribu ulti-level sec provides 'w apability. Ti	KMS). AFI of key mat tion and ma ture databas holesale' to er 2 installa	EKMS, in cc erial, voice c nagement sy es, trusted co 'retail' to 'coi tions compri	oncert with N callwords, ar stem provid omputing an nsumer' capa ise the distri	NSA's EKM! and communi- ling COMSE and informatic ability to dis	S, provides a cations securial Ckeying maon integrity. Artibute, mana ork and tier 3	secure and ty (COMSEC) terial for USAF AFEKMS is a ge and account comprises the
	retail locations' when	retail locations' where keying material leaves the AFEKMS and enters the End Item COMSEC Equipment (EICE) - the consumer. Acquisition includes Commercial Off The Shelf (COTS) committees and contractor developed amplication coffusate Government Eurnished Equipment (CEE)	EKMS and e	nters the En	id Item CON	ISEC Equip	ment (EICE) - the consu	imer.	Humished E	uninment (GER)
	Acquisition includes and software such as such as the F-22 and	Acquisition includes Commercial Out the Such (CO13) computers and software, contractor developed application software, Government Furnished Equipment (OrE) and software such as the NSA's Local COMSEC Management Software (LCMS). Also, USAF developed application software (UAS) is necessary for unique systems such as the F-22 and unique key fill requirements of EICE for other airborne platforms.	agement So EICE for oth	s) computers and sonware, com gement Software (LCMS). Also ICE for other airborne platforms.	AS). Also, Uplatforms.	tor develope JSAF devel	ed applicatio oped applica	ition software,	Governmen e (UAS) is r	rennished E necessary for	quipment (GrE) unique systems
9333	EY 1999 (\$ in Thousands) \$950 LC \$1,007 Lo \$1,957 Tot	<u>ands)</u> LCMS application software development (F-22) Local Management Device/Data Management Device (LMD/DMD) software development and system integration Total	evelopment (F-22) ata Management D	F-22) nent Device	(LMD/DMI)) software	development	t and system	ı integration		
2233	FY 2000 (\$ in Thousands) \$617 Tra \$616 LN \$1,233 Tot	ands) Transition LCMS application software development/sustainment (F-22) to Air Force LMD/DMD software development and system integration Total	software dev ment and sys	elopment/su stem integra	stainment (F	^{2.} -22) to Air	Force				
999	FY 2001 (\$ in Thousands) \$0 No Tot	ands) No Activity Total									•
Δ.	Project 674585			Page	Page 7 of 16 Pages	Š			Ш́	chibit R-2A (I	Exhibit R-2A (PE 0303140F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	SATION	SHEET (I	R-2A Exh	nibit)	7Q	DATE February 2000	2000
800 07	вирсет астилту 07 - Operational System Development		PE NUMBER AND TITLE 0303140F Inform	AND TITLE - Informat	tion Syster	PE NUMBER AND TITLE 0303140F Information Systems Security Program	y Program	PROJECT 674585
9	B. Project Change Summary N/A							
<u>E</u>	C. Other Program Funding Summary (\$ in Thousands) FY 1999 FY 2000 Actual Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to	Total Cost
555		4.857	4,700	5.511	5.507	4.017	Continuing	TBD
(2)	Title Comm Security/ BPAC 674861/ Cryptologic 2020 APPN 3600/PE 64239F/PE 410		`				Continuing	TBD
	Lute F-22/BFAC 654069/BPAC Title Adv. Tactical Fighter NOTE: BPAC 674585, Cryptologic 2020, will be funded under PE 33401, Comm Sec, BPAC 674861, Cryptologic 2020, beginning in FY01.	r PE 33401,C	omm Sec, BPA	.C 674861, Cr	yptologic 2020), beginning in	FY01.	
9	D. Acquisition Strategy All major contracts within this Program Element are awarded after full and open competition.	ter full and o	pen competitio	ü				
Ð	E. Schedule Profile	-	FY 1999	4	EY 2000	3 4	FY 2001	2001 3 4
99	F-22 UAS Development & Transition Complete DMD/DTD 2000 hardware/software development and system integration * Denotes Completed Events Y Denotes Planned Events	•						· ×
-	Project 674585	Pag	Page 8 of 16 Pages				Exhibit R-2A (PE 0303140F)	E 0303140F)

	RDT&E PROGRAM ELEMENT	SRAM ELE	:MENT/P	/PROJECT C	OST BF	COST BREAKDOWN (R-3)	VN (R-3)		DATE Fe	February 2000	000
BUE 07	вирсет аститт 07 - Operational System Development	Developme	nt		PE NUMB! 030314	PE NUMBER AND TITLE 0303140F Information Systems Security Program	ation Syst	ems Secu	rrity Prog	ram	PROJECT 674585
(£)	A. Project Cost Breakdown (\$ in Thousands)	n (\$ in Thousan	ds)				EV 1000	000	EV 2000	Ç	FV 2001
5	Hardware Development								L	a	0
£	-						2,1	1,957	1,233	e e	0
3	B. Budget Acquisition History and Planning Information (\$ in Thousands)	ory and Plannin	g Informatio	ın (\$ in Thousan	(Sp		`		,		
9	Performing Organizations:										
)		Contract	Augred or	Derforming	Droject						
	Performing	or Funding	Obligation	Activity	Office	Total Prior	Budget	Budget	Budget	Budget to	Total
	Activity	Vehicle	Date	EAC	EAC	to FY 1999	FY 1999	FY 2000	FY 2001	Complete	Program
	Product Development Organizations	izations									
	Motorola Inc.	SS/CPFF	Apr 97	N/A	N/A	51	950	83	0	Continuing	TBD
,	SAIC	BPA	May 98	N/A	N/A	823	1,007	575	0	Continuing	TBD
	(GS-35F-44616)										
	National Security Agency X35	SS/CPFF	Jun 98	N/A	N/A	517		575	0	Continuing	TBD
	Support and Management Organizations Trustest S/W Support MSN Support Test and Evaluation Organizations	rganizations ations				159				Continuing	TBD TBD
9	Government Furnished Property: Cont	operty: Contract Method/Type	Award or								
-	Item Description Veh Product Development Property Support and Management Property	or Funding Vehicle tty	Obligation <u>Date</u>	Delivery Date		Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
	Project 674585			Pag	Page 9 of 16 Pages	ges			Exhib	Exhibit R-3 (PE 0303140F)	303140F)

RDT&E PROGRAM ELEMENT/PROJ	//PROJECT COST BREAKDOWN (R-3)	WN (R-3)		DATE Fe	February 2000	8
вирсет астіvіту 07 - Operational System Development	PE NUMBER AND TITLE 0303140F Information Systems Security Program	ation Syst	ems Secu	rity Prog		PROJECT 674585
(U) Government Furnished Property Continued; Test and Evaluation Property Total Project						***************************************
Subtotals Subtotal Product Development Subtotal Support and Management	Total Prior to FY 1999 1,391 249	Budget FY 1999 1,957	Budget FY 2000 1,233	Budget FY 2001 0	Budget to Complete TBD TBD	Total Program TBD TBD
Subtotal Test and Evaluation Total Project	1,640	1,957	1,233	0	TBD	TBD
Project 674585	Page 10 of 16 Pages			Exhibi	Exhibit R-3 (PE 0303140F)	03140F)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	STIFIC/	TION 8	ЗНЕЕТ (R-2A E	xhibit)		DATE	February 2000	y 2000
BUDGET ACTIVITY 07 - Operational System Development			PE NUMBEF 0303140	PE NUMBER AND TITLE 0303140F Inform	nation Sy	PE NUMBER AND TITLE 0303140F Information Systems Security Program	ecurity F	rogram	PROJECT 677820
COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
677820 Computer Security RDT&E: Firestarter	3,877	8,741	5,320	5,062	5,148	5,249	5,353	5,353 Continuing	TBD

NOTE: FY00 New Start Request currently being processed for submission to Congress. Title: Pouncer 4. Amount \$2.995M. Years: FY00

(U) A. Mission Description

assessment and recovery, and multi-level security. With the advent of the information age, the battlefield commander's ability to fight and win becomes more dependent Communications, Computer, and Intelligence (C4I) Systems from Information Warfare (IW) Cyber attacks and to recover from those attacks. As the USAF single manager for Information Protect (R&D), this program directs C4I system Information Protect R&D with emphasis in computer/network systems security, damage demanded increasing reliance on these advanced information systems with global accessibility. The susceptibilities inherent in such reliance and accessibility has upon the availability, timeliness, and integrity of the information flow/processing capability available. The requirement for global presence and global power has This program directs the Research & Development (R&D) of Information Protect technology/tools to provide the capability to defend USAF Command, Control, reightened the awareness that the National Information Infrastructure (NII) and the Defense Information Infrastructure (DII) must be protected against attack.

project to meet their info protect needs/requirements. Additionally, this project utilizes info assurance technology investments by DARPA as a jump-start for providing Current Air Force systems such as the Combat Information Transport Systems (CITS), Theater Deployable Communications (TDC) leverage the technology from this provide the capability of collecting, integrating, and displaying threat, vulnerability, and system data indicating an attack is about to take place and/or is taking place. detection and characterization of attack. As adversaries may gain access to critical AF Force information systems through a variety of means, this technology will Emphasis is therefore placed on R&D areas that provide deterrence of attack through cyberspace surveillance, Tactical Indications & Warning (I&W), intrusion a solution to Air Force requirements and cooperates with DISA and other services/agencies to ensure DII info protect requirements are complied with.

(U) FY 1999 (\$ in Thousands)

Project 677820 Page 11 of 16 Pages

Information Protection (BIP) Suite

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Exhibit R-2A (PE 0303140F)

	RDT&E	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 2000	2000
8UD(вирсет астилту 07 - Operational System Development	em Development	PE NUMBER AND TITLE 0303140F Information Systems Security Program	ity Program	PROJECT 677820
<u>e</u>	A. Mission Description Continued	n Continued			
99999	EY 1999 (\$ in Thousands) Continued \$292 Completed eff \$302 Initiated effor \$302 Initiated effor \$3,877 Total	Ids) Continued Completed effort to demonstrate INFOSEC for Air Force Network Operations S Initiated effort to transition secure wrapper technologies into Air Force systems. Initiated effort for automatic capability to trace source of intrusions Total	ds) Continued Completed effort to demonstrate INFOSEC for Air Force Network Operations System Centers (AF NOSCs) Initiated effort to transition secure wrapper technologies into Air Force systems. Initiated effort for automatic capability to trace source of intrusions Cotal		
9999	EY 2000 (\$ in Thousands) \$1,103 Co \$406 Be \$660 Co	Continue development of technology for self-healing network system Begin development of Information Attack correlation methodologies Continue effort to transition DARPA information assurance technology Transport System (CTS) SPO	ds) Continue development of technology for self-healing network systems (to include automated system recovery) Begin development of Information Attack correlation methodologies Continue effort to transition DARPA information assurance technology to Air Force Information Warfare Center (AFIWC) and Combat information Exercise (ATIWC).	r) nter (AFIWC) and Co	mbat
333	\$404. \$4,912 \$802		odologies for commercial software evaluation and steganography detection interoperable distributed agent computing (\$4.5M Congressional Add) le prototype framework for Enterprise Defense to support protection of warfighter mission critical information	hter mission critical in	ıformation
999	\$454 \$0 \$8,741	inue effort to transition sec er 4 - pending submission	ure wrapper technologies into Air Force systems. to Congress and approval of new start effort.		
<u> </u>	EY 2001 (\$ in Thousands) \$1,290	Continue development of technology for self-healing network systems (to include Continue development of Information Attack correlation methodologies Continue development of methodologies for commercial software evaluation and Continue development of extensible prototype framework for Enterprise Defense information flows Continue effort to transition secure wrapper technologies into Air Force systems. Continue effort to transition DARPA information assurance technology into AF I Begin effort to develop metrics for reliable information assurance measurement of Total	Continue development of technology for self-healing network systems (to include automated system recovery) Continue development of Information Attack correlation methodologies Continue development of methodologies for commercial software evaluation and steganography detection Continue development of extensible prototype framework for Enterprise Defense to support protection of warfighter mission critical nformation flows Continue effort to transition secure wrapper technologies into Air Force systems. Continue effort to transition DARPA information assurance technology into AF Information Protect architecture Begin effort to develop metrics for reliable information assurance measurement & testing	rfighter mission critic	is
<u> </u>	B. Project Change Summary Project 677820		Page 12 of 16 Pages	Exhibit R-2A (PE 0303140F)	0303140F)
	19501 01 1950	29.1	12 01 10 1 4503		2000

	RDT&E BUDGET ITEM JUS	JSTIFICATI	TIFICATION SHEET (R-2A Exhibit)	(R-2A Ex	hibit)	נו	DATE February 2000	y 2000
BUE 07	вирсет Астилту 07 - Operational System Development		PE NUMBE 030314	PE NUMBER AND TITLE 0303140F Informa	ition Syste	ms Securi	PE NUMBER AND TITLE 0303140F Information Systems Security Program	PROJECT 677820
<u>(</u>	C. Other Program Funding Summary (\$ in Tho FY 1999 I			FY 2003	FY 2004	FY 2005	Cost to	Total Cost
99	Actual ES AF RDT&E Other APPN None	Estimate Estimate	ie Estimate	Estimate	Estimate	Estimate	Complete	
9	D. Acquisition Strategy All major contracts within this Program Element are awarded after full and open competition.	awarded after full	and open competi	tion.				
ව	E. Schedule Profile		EY 1999	29°	- EY.	FY 2000	FY	FY 2001
99	Requirements Review Boards AF NOSC INFOSEC Transition/demonstrations		4		1	· ×	-	
333	Transition Secure Wrapper Tech Development to AF Sysegin Development of Self Healing Network Systems	f Systems ns	*	*		:		:××
99	MLS DB technology transition Develop Secure Interoperable Distributed Computing System &	g System &	*	* *		×		××
9	Periodically De Begin development of methodologies for Commercial Software Evaluation and	ial Software	*					×
99	DARPA Information Assurance Technology Transition Devel tech for tracing intrusions	ion	*			× ×		
333	Information attack correlation technology development Develop and periodically demonstrate extensible prototype framework	ent ıtotype framework			* *	:	×	×
5	for Ent Begin Development of reliable information assurance measurement &	e measurement &					×	
<u>e</u>	testing Develop automated Information damage assessment and capability	and recover			×			
<u>.</u>	Project 677820		Page 13 of 16 Pages	ges			Exhibit R-2A (PE 0303140F)	PE 0303140F)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	SHEET (R-	-2A Exhil	bit)	J	DATE Fe	February 2000	2000	
вирсет астииту 07 - Operational System Development	PE NUMBER AND TITLE 0303140F Inform	₽ TITLE Informatiα	PE NUMBER AND TITLE 0303140F Information Systems Security Program	Secur	ity Prog	ram	PROJECT 677820	۰ و
(U) E. Schedule Profile Continued	X 199	•	Y 200		,	EX 2001		•
KEY: * Denotes Completed Events; X Denotes Planned Events.	5	4	7	ی 4	-	74	. ∪	4.
Project 677820	Page 14 of 16 Pages				Exhibit I	Exhibit R-2A (PE 0303140F)	0303140	Ē

	RDT&E PROGRAM ELEMENT	MELEI	MENT/PR	/PROJECT COST BREAKDOWN (R-3)	ST BR	EAKDOV	VN (R-3)		DATE Fe	February 2000	8
910 01	вирсет астіліту 07 - Operational System Development	elopmen	ţ		РЕ NUMBE 030314	PE NUMBER AND TITLE 0303140F Information Systems Security Program	ation Syst	ems Secu	rity Prog		PROJECT 677820
(C)	A. Project Cost Breakdown (\$ in Thousands)	Thousand	(3				FY 1999	666	FY 2000	0	FY 2001
555	Secure Data Handling System Database Protection Mechanisms							28		1	
9999	Security Adalysis 1001s DARPA Technology Insertion/Transition Secure Distributed Computing/Collaborative Planning Information Protection (TP) Integration Framework	nsition laborative F	lanning				3 1,5 0	313 1,512 202	660 4,912	7 0	780
2000	Self-Healing Network System (to include automated system recovery) Wrappers to Secure Commercial-Off-the-Shelf (COTS) Information Attack Data Correlation	nclude auto	mated system r f (COTS)	ecovery)			1 W W .	272 302 203	1,103 454 406	£ 4 9 c	1,290 480 780
3333	Extensible framework for Enterprise for Defense COTS Software (S/W) Evaluation Reliable Information Assurance measurement & testing Total	se ror Derer easurement	lse & testing				3,8 8,6	302 546 3,877	802 404 8,741	7 4 1	880 680 430 5,320
9	B. Budget Acquisition History and Planning Information (\$ in Thousands)	d Planning	Information (S in Thousands)							
<u> </u>	Performing Organizations: Contractor or Government Performing Activity Product Development Organiz	act ad/Type iding	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	<u>Total</u> Program
	FFRDC (MITRE) Multiple Contractors CPFF Universities Cupport and Management Organizations Test and Evaluation Organizations		On-Going On-Going On-Going	N/A N/A N/A	N/A N/A N/A	652 2,277 368	171 3,308 398	490 7,661 590	548 4,124 648	Continuing Continuing Continuing	TBD TBD TBD
ш.	Project 677820			Page 1	Page 15 of 16 Pages	ses			Exhibi	Exhibit R-3 (PE 0303140F)	303140F)

RDT&E PROGRAM ELEMENT/PROJECT (I/PROJECT COST BREAKDOWN (R-3)	WN (R-3)		DATE Fe	February 2000	_
BUDGET ACTIVITY	PE NUMBER AND TITLE		9	:		PROJECT
u/ - Operational System Development	U3U314UF Intormation Systems Security Program	ation Syst	ems secu	rity Progi		0//8/0
Subtotals	Total Prior to FY 1999	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
Subtotal Product Development	3,297	3,877	8,741	5,320	TBD	TBD
Subtotal Support and Management						
Total Project	3,297	3,877	8,741	5,320	TBD	TBD
Project 677820 Pag	Page 16 of 16 Pages			Exhibit	Exhibit R-3 (PE 0303140F)	3140F)

RDT&E BUDGET ITEM JI	JSTIFIC	ATION	JSTIFICATION SHEET (R-2 Exhibit)	(R-2 Ex	hibit)		DATE	Februa	February 2000
BUDGET ACTIVITY 07 - Operational System Development			PE NUMBER 0303141	PE NUMBER AND TITLE 0303141F Globa	Comba	PE NUMBER AND TITLE 0303141F Global Combat Support System (GCSS)	t Systen	(GCSS)	PROJECT 674655
COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
674655 BLSM	17,083	19,283	46,369	28,064	30,700	29,431	29,547	29,547 Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

A. Mission Description 3

systems. The modernized systems are being developed in compliance with and hosted on the Defense Information Infrastructure (DII) Common Operating Environment (COE). The centerpiece of the GCSS-AF effort is an architecture that provides common computing utilities and infrastructure services for all combat support systems and enables real-time access to accurate, current data. The GCSS-AF architecture will ensure on-time delivery of critical functional support data to decision support systems for wing commanders, operational commanders, and theater battlestaff at the Point-of-Attack. The modernized systems will be implemented and sustained worldwide and support both wartime and peacetime requirements using hardware, software, and communications capabilities available from standard open systems The GCSS-AF program modernizes, develops, and integrates legacy base-level standard Air Force and Department of Defense (DoD) combat support information government contracts and communications infrastructure programs.

modernized database management system and/or modernized programming will be technically modernized. Other AISs will be rehosted to the COE. The GCSS-AF systems. Those Automated Information Systems (AISs) requiring improvements in business practices will be functionally modernized. Those AISs requiring only a The GCSS-AF approach allows for gradual, incremental modernization of legacy 'stove-pipe' environments into an interoperable set of management information program will also assist AISs in complying with the GCSS-AF concept. This approach supports both regional and distributed processing.

System (SBSS). Starting in FY00, this effort underwent a significant restructure to decrease dependence on a commercial off-the-shelf Grand Design to using a spiral The Integrated Logistics System - Supply (ILS-S) will be one of the first systems modernized. This effort will modernize the existing legacy Standard Base Supply development acquisition approach to technically refresh and componentize the legacy SBSS to better meet User requirements in a more timely manner. While this approach is technically different than the one previously being pursued, it does not change program requirements. The schedule to satisfy existing program requirements has been restructured to fit within available FY funding.

budgets. FIRST is ultimately envisioned to be the foundation for the Air Force's Planning, Programming, and Budgeting System (PPBS). FIRST will be compliant with Beginning in FY01, funding for the Financial Information Resource System (FIRST) was transferred to this program. FIRST is a software development effort aimed at the Joint Technical Architecture (JTA) and incorporate Public Key Infrastructure initiatives (such as electronic signature capability). FIRST will share information with providing an integrated, modern, seamless financial management system that enables authorized users (from Air Staff to base level) to plan, program, and execute their

Project 674655

Page 1 of 5 Pages

Exhibit R-2 (PE 0303141F)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EET (R-2 Exhibit)		DATE February 2000	000
900 01	BUDGET ACTIVITY 07 - Operational System Development 030:	PE NUMBER AND TITLE 0303141F Global Combat Support System (GCSS)	at Support Sy	/stem (GCSS)	РРОЈЕСТ 674655
9	A. Mission Description Continued other Air Force Functional activities within the scope of the Global Combat Support System-Air Force (GCSS-AF) concept.	rt System-Air Force (GCSS-A	F) concept.		
55555	FY 1999 (\$ in Thousands) \$3,239 Logistics Integration (formerly known as Core) \$9,241 ILS-S (Integrated Logistics System-Supply) \$4,603 GCSS-AF Architecture Development (formerly known as DII) \$17,083 Total	iI)			
55555	FY 2000 (\$ in Thousands) \$7,242 Logistics Integration (formerly known as Core) \$10,052 ILS-S \$1,989 GCSS-AF Architecture Development (formerly known as DII) \$19,283 Total	(I)			
555555	FY 2001 (\$ in Thousands) \$7,215 Logistics Integration (formerly known as Core) \$11,538 ILS-\$ \$9,912 GCSS-AF Architecture Development (formerly known as DII) \$9,912 GCSS-AF Domain Integration \$7,792 Financial Information Resource System (FIRST) \$46,369 Total	(I)			
<u>e</u>	B. Budget Activity Justification This program is in Budget Activity 7, Operational System Development, because the program modernizes Automated Information Systems (AISs).	he program modernizes Auton	nated Information S	Systems (AISs).	
<u> </u>	C. Program Change Summary (\$ in Thousands) Previous President's Budget (FY 2000 PBR) Appropriated Value Adjustments to Appropriated Value a. Congressional/General Reductions b. Small Business Innovative Research	EY 1999 17,906 17,973 -67 -442	EY 2000 19,742 19,389	EY 2001 21,317	Total Cost TBD
	Project 674655 Pages	5 Pages		Exhibit R-2 (PE 0303141F)	0303141F)
	1384				

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM JUSTII	FICATION	SHEET	(R-2 Exhi	bit)	<u>a</u>	DATE February 2000	y 2000
BUDGE 07 - C	вирсет астилту 07 - Operational System Development	ent		PE NUMBER AND TITLE 0303141F Globs	AND TITLE F Global C	ombat Su	pport Sys	PE NUMBER AND TITLE 0303141F Global Combat Support System (GCSS)	PROJECT 674655
5 (n)	C. Program Change Summary (\$ in Thousands) Co	ousands) Continued	pa		FY 1999	FY 2000		FY 2001	Total Cost
	c. Omnibus or Other Above Threshold Reprogram d. Below Threshold Reprogram e. Rescissions	program			-285	-106			
5 <u>5</u>	 L. Other Adjustments to Budget Years Since FY 2000 PBR Current Budget Submit/FY 2001 PBR 	000 PBR			17,083	19,283		25,052 46,369	TBD TBD
<u>()</u>	Significant Program Changes: \$18 million in FY01 RDT&E funds were added for GCSS-AF Domain Integration and GCSS-AF Architecture Development. Funding for the Financial Information Resource System (FIRST) was transferred to this PE for FY01-05. The ILS-S modernization effort was restructured at the direction of the Defense Acquisition Executive (DAE), June 1999.	added for GCSS-A ource System (FIR ctured at the direct	F Domain Integ (ST) was transfi tion of the Defe	gration and GC erred to this PI :nse Acquisitio	SS-AF Archite 5 for FY01-05. n Executive (D	ecture Develop AE), June 199	ment. 19.		
a (D)	D. Other Program Funding Summary (\$ in Thousands) FY 1999 FY 2000 Actual Estimate	in Thousands) 9 EX 2000 al Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	EY 2004 Estimate	FY 2005 Estimate	Cost to	Total Cost
(U) O	Other Procurement AF, BA 7, PE 0303141F		0	0	0	15,522	30,926	Continuing	TBD
(C) A	E. Acquisition Strategy All major contracts within this Program Element were awarded after full and open competition.	ement were awarde	d after full and	open competit	tion.				
(U) E	F. Schedule Profile		I	FY 1999 2 3	4	EY 2000 1 2 3	3 4	EX 1	EY 2001 2 3 4
	Logistics Integration (on-going) GCSS-AF Architecture Development (on-going) Integrated Logistics System Supply (ILS-S) Alpha I Delivered	going))	*						
<u> </u>	Alpha 2 Delivered Alpha 3 Delivered Inc 1, ILS-S			*	*	×			
Pro	Project 674655		Pag	Page 3 of 5 Pages				Exhibit R-2 (PE 0303141F)	² E 0303141F)

RDT&E	RDT&E BUDGET ITEM JUSTIFICATION	STIFICATION SHEET (R-2 Exhibit)	Exhibit)		DATE	February 2000	2000
вирсет Астіvітy 07 - Operational System Development	ו Development	PE NUMBER AND TITLE 0303141F Global Combat Support System (GCSS)	्ह bal Comb	at Support	System	(GCSS)	PROJECT 674655
(U) F. Schedule Profile Continued	рэп	X 1999	,	X 200		EY 2001	
(U) Release 1 (Increment 1 IOC) (U) Release 2 (U) Release 3 * - Completed Event X - Planned Event	110C)	2 E	—	c ∞ ×	4	- ×	ω × 4
Project 674655	Page	Page 4 of 5 Pages			Ä	Exhibit R-2 (PE 0303141F)	E 0303141F

	RDT&E PROGRAM ELEMENT	SAM ELE	MENT/PR	/PROJECT C	OST BF	COST BREAKDOWN (R-3)	WN (R-3)		DATE F 6	February 2000	000
800 07	вирсет астилту 07 - Operational System Development	evelopme	nt		PE NUMBI 030314	PE NUMBER AND TITLE 0303141F Global Combat Support System (GCSS)	Combat 8	Support S	ystem (G		PROJECT 674655
<u>(c)</u>	A. Project Cost Breakdown (\$ in Thousands)	s in Thousand	(<u>st</u>				1.782	O	VOC 1811	8	137.0001
99	Logistics Integration (formerly known as Core) ILS-S	known as Cor	(a.				3,239 9,241	3,239 9,241	7,242	3 2 2	7,215
333	GCSS-AF Architecture Development (formerly known GCSS-AF Domain Integration	pment (forme	rly known as DII)	Œ			<u>, 4, </u>	4,603 0	1,989	. 6 <u>8</u> 0	9,912
33	Financial Information Resource System (FIRST) Total	System (FIR	ST)				17,	0 17,083	0 19,283	0 83	7,792 46,369
3	B. Budget Acquisition History and Planning Information (S in Thousands)	and Plannin	g Information	(S in Thousand	ন্তে						
9	Performing Organizations:										
	Contractor or Co	Contract Method/Tyme	Award or	Performing	Project						
	<u>gui</u>	or Funding	Obligation	Activity	Office	Total Prior	Budget	Budget	Budget	Budget to	Total
	Activity Product Development Organizations	Vehicle	Date	EAC	EAC	to FY 1999	FY 1999	EY 2000	FY 2001	Complete	Program
	Lockheed Martin II	DIQ	15 Aug 95	N/A	N/A	31,542	15,552	8,745	10,407	Continuing	TBD
	re Factory)	N/A	N/A	N/A	N/A	0	0	6,045	6,500	Continuing	TBD
		TBD	TBD	N/A	N/A	0	0	0	25,860	Continuing	TBD
	Support and Management Organizations	nizations									
		Various	Various	N/A	N/A	2,813	725	1,680	1,723	Continuing	TBD
	SSG PMO Support	N/A	N/A	N/A	N/A	5,556	908	2,813	1,879	Continuing	TBD
	rest and Evaluation Organizations	4				Total Prior	Budget	Budget	Budget	Budget to	Total
	Subtotals					to FY 1999	FY 1999	FY 2000	<u>PW 2001</u>	Complete	Program
	Subtotal Product Development					31,542	15,552	14,790	42,767	TBD	TBD
	Subtotal Support and Management	ent				8,369	1,531	4,493	3,602	TBD	TBD
	Subtotal Test and Evaluation										
	Total Project					39,911	17,083	19,283	46,369	TBD	TBD
	Project 674655			Pag	Page 5 of 5 Pages	es			Exhib	Exhibit R-3 (PE 0303141F)	303141F)
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